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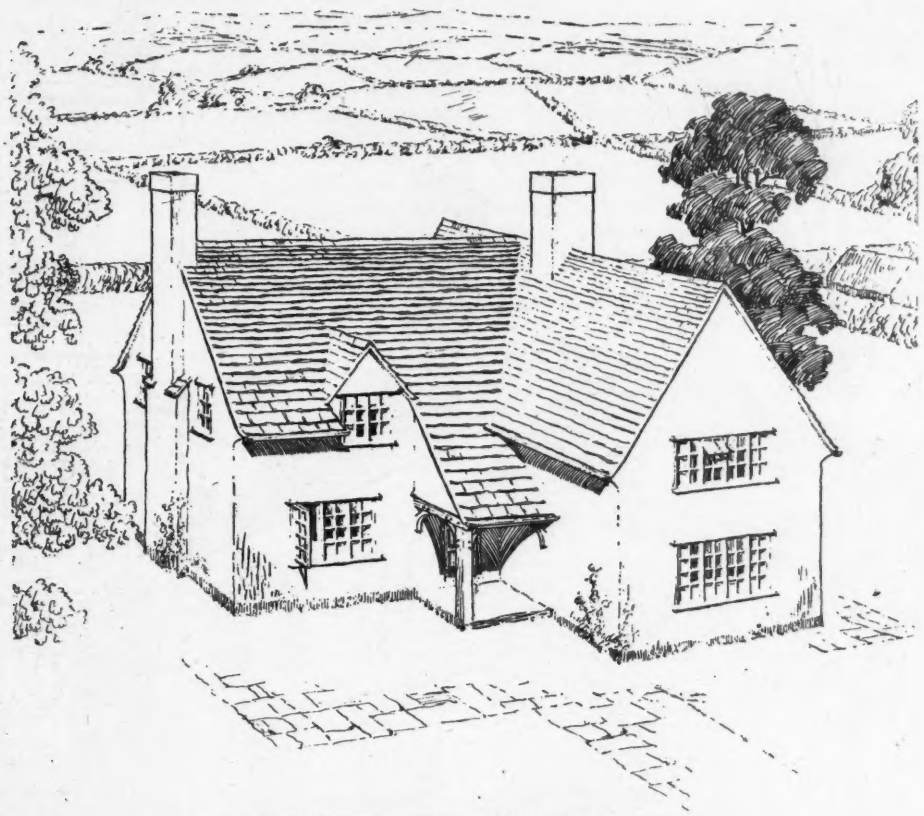


A STATE-AIDED COTTAGE IN THE IRISH FREE STATE.

MR. GORDON ALLEN, F.R.I.B.A., Architect.

(See pages 576 & 580.)

MEETINGS

FRIDAY, *April* 6.

Society of Chemical Industry. Conference on Air Conditioning and an Exhibition of Apparatus. At the Queen's Hotel, Leeds. 3 p.m.

SATURDAY, *April* 7.

Institution of Structural Engineers (*South Western Counties Branch*). Annual General Meeting. At the Athenæum, George-street, Plymouth. 7 p.m.

MONDAY, *April* 9.

Royal Institute of British Architects. Presentation of the Royal Gold Medal to Mr. Henry Vaughan Lanchester. 8.30 p.m.

Chartered Surveyors' Institution. Messrs. J. A. Rosevear and D. M. Lawrence on "Compensation and Betterment under the Town and Country Planning Act, 1932." 8 p.m.

Society of Engineers. Mr. H. C. H. Shenton on "Review of the Present Methods of Sewage Disposal." At Burlington House, W.1. 6 p.m.

TUESDAY, *April* 10.

Institution of Sanitary Engineers. Mr. John T. Calvert on "The Design of Sewage Treatment Works in the United States of America." At Caxton Hall, S.W.1. 6 p.m.

Royal Sanitary Institute. Discussion on "Drainage Difficulties in Rural Areas and Their Relation to Town Planning." To be opened by Lieut.-Col. P. A. Hopkins. At 90, Buckingham Palace-road, S.W.1. 5.15 p.m.

Institution of Civil Engineers. Discussion on "Sydney Harbour Bridge"; Messrs. Ralph Freeman and L. Ennis on "Design of Structure and Foundations" and "Manufacture of the Structural Steelwork and Erection of the Bridge"; and Messrs. J. T. Pain and G. Roberts on "Calculations for the Steel Superstructure"; and Mr. J. J. C. Bradfield on "The Bridge and Approaches." 6 p.m.

WEDNESDAY, *April* 11.

Royal Society of Arts. Mr. Hanslip Fletcher on "London from the Pavement." 8 p.m.

Chartered Surveyors' Institution (*Lancashire and Cheshire Junior Branch*). Annual General Meeting. At Warrington. 6 p.m.

Institution of Structural Engineers (*Lancashire and Cheshire Branch*). Annual Business Meeting. At the College of Technology, Manchester. 7 p.m.

National Housing and Town Planning Council. Annual Conference of the Lancashire and Cheshire Authorities. At the Town Hall, Manchester. 11 a.m.

Institution of Civil Engineers. Mr. A. C. Buck on "Models and Moments in Rigid Frames." 6.30 p.m.

THURSDAY, *April* 12.

Architecture Club. Discussion on "Street Furniture and Street Advertising." At 34, Bedford-square, W.C.1. 7.30 p.m.

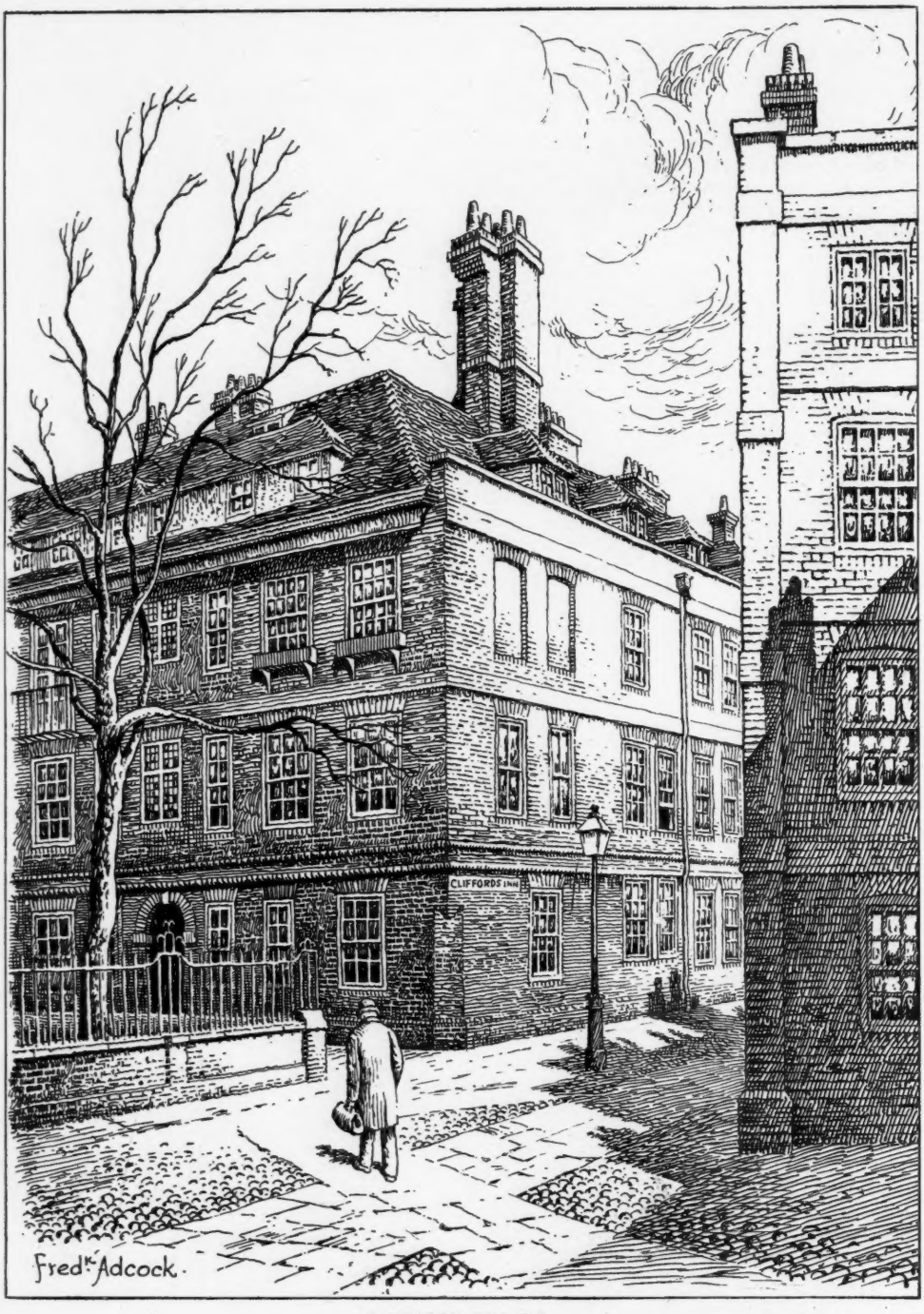
Institution of Structural Engineers. Mr. J. Singleton-Green on "Lightweight Concrete Construction." 6.30 p.m.

Chartered Surveyors' Institution. Mr. A. K. Dowse on "Prevention of Slums." 6.30 p.m.

Southern Counties Federation of Building Trade Employers Visit to the new R.I.B.A. Premises, Portland-place, W.1. 11 a.m.

FRIDAY, *April* 13.

Hampshire and Isle of Wight Architectural Association. General Meeting. At Bournemouth. 6.15 p.m.



CLIFFORD'S INN, E.C.

FROM A DRAWING BY MR. FREDERICK ADCOCK.

(See page 576.)

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UNIVERSITY OF ILLINOIS

WATERLOO BRIDGE

THE amazing decision of the new party in power at the London County Council to demolish Waterloo Bridge and construct a new bridge to accommodate six lines of traffic will reopen the long controversy which appeared to be settled by the decision of the late Council to recondition the bridge and, by corbelling out, to widen it to take four lines of traffic. The fate of the bridge has been debated for nearly eleven years, and those who remember the attitude of many members of the late Council towards the public-spirited people who opposed, and defeated, the various attempts to destroy a fine bridge will now be able fully to appreciate the criticism as to the serious consequences of the delay in deciding the fate of the structure for which this "small body of artistic die-hards" were said to be responsible; and they will also realise how little the legitimate wishes of responsible and influential individuals are considered by public bodies. It is claimed that the new Council had a mandate to demolish the bridge, but this is not a statement of fact, though even if a majority of an indifferent and ill-informed electorate understood it to be the intention of the Labour party, should they be returned to power, to reopen the question and thus impose upon London more of that delay which they had condemned, the newly-elected party had no right to ignore the settlement already reached, nor the convictions of many of the best minds of the country.

During the discussion which preceded the decision it was argued that there were three "needs" at Waterloo—a bridge capable of carrying the traffic which went over it; a bridge that should not be an impediment to river traffic which had to go under it; and a bridge which should be a thing of beauty. It was contended by the Chairman of the Highways Committee "that the only solution which conformed to those requirements was the demolition of the bridge and the building of a new one. With regard to traffic, it had been established beyond dispute that a six-line bridge was necessary." Whatever point there may be in two of these three "needs"—and we admit there may be a case to be answered as to the existing bridge impeding river traffic in some measure, though the criticism seems to have been over-stressed in proportion as the other "needs" have not altogether served their purpose—the third, the need for a new bridge to accommodate six lines of traffic, will not be endorsed by those acquainted with traffic conditions at the Strand approaches, whether the matter has or has not "been gone into most carefully" by the London Traffic Advisory Committee. The need for more cross-river accommodation between Charing Cross and Blackfriars is undoubtedly great and should be provided, though not by means of a wider Waterloo Bridge, unless something drastic is done at the Strand end to deal with the increased traffic which might be expected from a bridge to accommodate six lines of traffic. One-way conditions at present, with only two lines of bridge traffic, are a nightmare to many pedestrians who need to cross the Strand and Aldwych daily, and what they would become at certain times of the day with six lines of traffic entering and leaving the bridge we cannot imagine, though we can say, from an intimate knowledge of the existing two-line traffic and the conditions in the Strand and Aldwych, that if members of the Traffic Advisory Committee did "go into the matter most carefully" and yet reported in favour of a Waterloo Bridge to accommodate six lines of traffic, we should like them and the members of the L.C.C. who so confidently voted for a wider bridge to face the real discomfort and danger of crossing the Strand and Aldwych during certain hours of the day and certain conditions of the weather. If they did we are inclined to think we should hear less of the argument of urgent necessity for six lines of traffic across the bridge. Of course the dangerous and difficult conditions which exist call for relief, and that in the view of many experts should be provided by means of a new bridge nearer the Temple, as well as a new Charing Cross bridge, and some such relief is inevitable in the near future.

The subject of river traffic in relation to Waterloo Bridge has received particular attention in this new attack on the bridge, and we are told that it has never received sufficient consideration and that the bridge has been a continual danger to river craft. A "continual" danger implies a danger before the failure ten years ago of one of the piers, and yet during the 100 years of its existence it has not been suggested until now that the bridge should be demolished because of this alleged danger. It is one thing to assert that the bridge is so dangerous to navigation but another to justify the statement. The tidal difficulty which is no doubt referred to would probably be overcome with the building of a new bridge at Charing Cross, which sooner or later must be undertaken. Mr. John Murray, F.S.A., who has given a great deal of study to the problem of a new bridge at Charing Cross, writing to *The Times* says that this tidal difficulty could "be completely solved by building a new five-arched Charing Cross Bridge across the bend of the river opposite Buckingham-street. In this position the down stream would strike the piers supporting the new bridge so that the angle of incidence of the stream with the sides of the piers would produce an angle of refraction which would shoot the stream straight through the arches of Waterloo Bridge instead of striking the piers of that bridge at a considerable angle as at present, due to the curve in the river between the bridge and the railway bridge. The present Waterloo Bridge when reconditioned would then be as effective for river traffic as Westminster Bridge, whose arch capacity is no greater."

The decision of the Council to demolish the existing bridge and erect a new one in its place is conditional on a grant of 60 per cent. of the cost being obtained from the Road Fund, though it has been stated, with what authority we do not know, that the Council would be prepared to proceed with the erection of a new bridge even should the Government reject the new proposals, as they did those of the previous Council, and refuse a grant.

We might have hoped that the party now in power at the L.C.C. would have accepted the findings of the Royal Commission, the decision of Parliament and the considered opinion of many architects, engineers and experts, as well as the traffic facts, and would have proceeded to prepare a bridge policy for the Thames between Blackfriars and Charing Cross. If a new Charing Cross Bridge is ever to be built the need for such a policy is urgent, as we must realise from the fact that the Ecclesiastical Commissioners, who control some 30 acres on the southern side at Charing Cross and who have waited to see what public improvements would be carried out, can wait no longer and "have decided to embark on costly development schemes for rehousing their working class tenants." In developing such a policy is work for the Council, instead of destroying a fine bridge and adding to the traffic difficulties in the Strand. Even if the present Council do provide a five-span structure "in harmony," as we are told, "with other modern buildings around it," would it be in harmony with Somerset House, which is not a modern building and very close to the bridge?

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NOTES

"Building Upward."

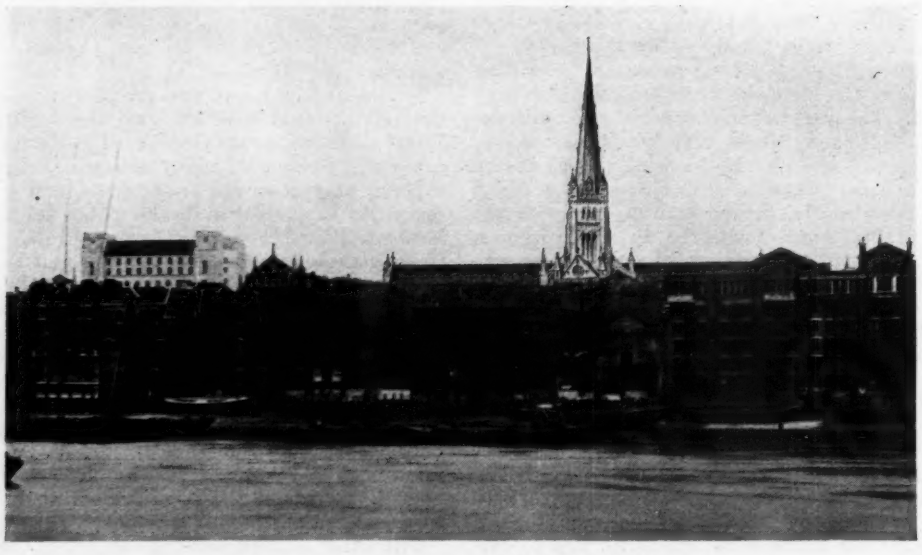
THE dangers of building upward unless adequate traffic facilities, including additional road space, are provided when higher building increases the population per acre, are pointed out by Mr. W. Rees Jeffreys, Secretary of the Roads Improvement Association, in a letter to *The Times*. He states that the policy of building upward is a prime cause of traffic delays and road accidents. Having drawn attention to some particularly glaring examples of congestion in London through higher building, he says that the main responsibility must be laid broadly at the door of successive Parliaments. "Parliament legalises new vehicles and prevents road space being provided for them. It authorises building developments without requiring the provision of adequate traffic facilities. It has created literally hundreds of authorities in Traffic London without securing adequate co-ordination and considered division of function. It has taken arterial road and bridge building out of the hands of private enterprise, but refuses itself to build or to set up proper machinery for building the roads and bridges which traffic requires." He concludes that "unless there is proper co-ordination between housing, industrial and commercial development and traffic requirements, conditions will get worse instead of better. The demand for costly and unremunerative tube railways to serve N.E. and S.E. London is a consequence of the lack of administrative machinery to provide traffic avenues in advance of local building." The need for an authority competent to plan and possibly finance the development of Greater London as a whole is obvious.

The Road Traffic Bill and Road Frontages.

ONE of the outstanding measures of the new Road Traffic Bill, published a few days ago, is a 30-mile-an-hour limit in built-up areas (wherever there are houses and street lamps). For motorists who are accustomed to travelling long distances, this new speed limit proposed by the Government has a serious interest, as well as for the long-distance coaches, many of which have to pass through miles of built-up areas at fast speeds in order to keep up to schedule. This Bill should, however, be a further encouragement for not building extensively along our main arterial roads. A publication of the Council for the Preservation of Rural England showed the inadvisability of building along arterial roads, and the new Road Traffic Bill goes to show the forethought of this society. The publication says: "It is probable that, outside the large towns, building on these frontages is a mistake from every point of view. . . . The expensive surfaces to carriageways that modern traffic necessitates, once laid should not be disturbed, and therefore the pipes or cables of public services, such as gas, water, electricity and sewers, can no longer be laid beneath such carriageways, but must be duplicated on either side. It is probable, therefore, that for a given sum a larger area of land could be brought into development and a larger land value created by developing an area adjacent to an arterial road, but not using its frontage, than by stringing development out along that frontage. Also, in general, the increased value given to land by the presence of an arterial road, is the accessibility this provides, rather than its frontage potentialities. If the frontage is built upon, this valuable quality of accessibility is impaired by the check to traffic imposed by vehicles standing in front of buildings. By making subsidiary roads of comparatively light and cheap construction, suitable to residential development, large areas can be made accessible. But to build fronting the artery tends to congestion, and by decreasing its value as an artery diminishes its beneficial effect upon the adjacent country. Arteries should function as arteries and not be used as veins." If a great deal of the ribbon development and huge building developments along our main roads could have been centralised away from the main arteries, then it would not be necessary to impose this new speed limit along the built-up areas, and long-distance traffic could have covered larger distances quicker, and so benefited by the saving in time.

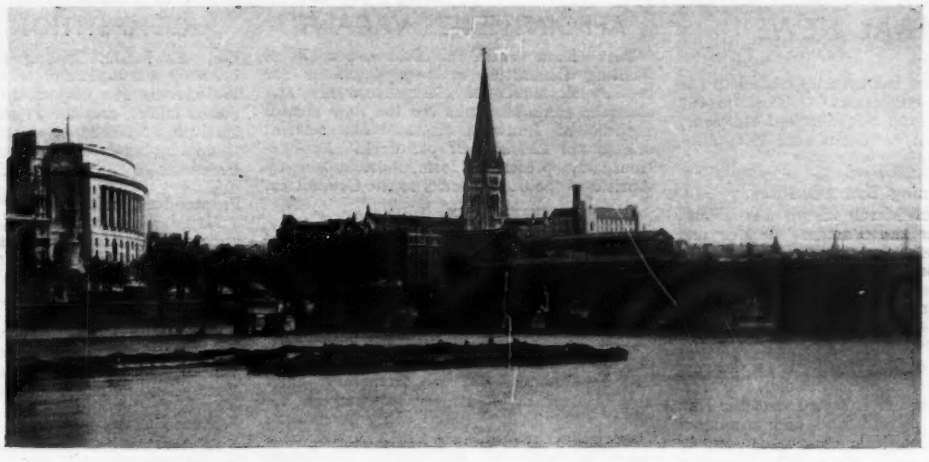
Overcrowding in Cities.

THE proposals of the Minister of Health to grant subsidy for the reduction of overcrowding outside the demarcated slum areas has revived the problem of whether the workers should be housed by the factories or whether the factories should be taken to the workers—in other words rehousing on the old sites or the creation of satellite towns. The claims of the latter procedure are advocated by Mr. Barry Parker—as chairman of the R.I.B.A. Town Planning and Housing Committee—in *The Times*. He points out that the cost of rehousing in satellite towns is considerably lower than on central sites. Mr. Barry Parker also presses the advantages of the cottage, from the social aspect, as against the tenement.



OLD ST. PAUL'S AS IT WOULD APPEAR TO-DAY FROM BANKSIDE.

(See page 578.)



OLD ST. PAUL'S AS IT WOULD APPEAR TO-DAY FROM A SOUTH-SIDE WHARF WEST OF BLACKFRIARS BRIDGE.

(See page 578.)

The Problems of Industry.

WHILE we agree with these claims in principle, it must not be overlooked that, in London, a high proportion of inhabitants living in semi-slum conditions are engaged in work that would prevent them being rehoused outside the Metropolitan area, *e.g.*, work connected with transport or goods distribution—under which latter heading the docks and markets must be placed. For the remainder, transference to a satellite town would prove an excellent solution. The difficulty of persuading industry to move out has always been the stumbling block, as is proved by the comparatively slow growth of Welwyn and Letchworth—each intended as a self-supporting town. In this connection the future of Wythenshawe (where special inducements are, we believe, offered to industry to establish factories) will be watched with interest. A plan to achieve a greater measure of decentralisation of industry will have to be devised before much success in the establishment of satellite towns can be expected, and attention might well be turned to this aspect of the problem. A successful solution would enormously simplify the whole question.

Building Statistics.

The Board of Trade Journal for March 29 reveals that plans passed for general building work, excluding housing, for the month of February are still unsatisfactory, judged by the amount of work required. February's index is 19 per cent. worse than twelve months previously, and is only 10 per cent. better than the 1924 figures. The building trade cannot be said to be forging ahead until this index improves. Some consolation is afforded by the figures for housing which reach a new high level, being an improvement of 48 per cent. on the figures for February, 1933. Unemployment has decreased during the month by 3.1 per cent., and stood at the end of February at 22.8 per cent. Unemployment in Public Works Contracting dropped from 48.6 to 47.1 per cent.

Architectural Posts Open.

AN encouraging sign is that during the last few weeks there has been an increased demand for the services of architects in municipalities. There are, for instance, no fewer than nineteen positions for architects, architectural assistants, town-planners and quantity surveyors advertised by local authorities in *The Builder* this week. We were informed recently that the secretary of a leading architectural society had found positions for nearly a hundred young members since Christmas. The demand for clerks of works and builders' foremen has also quickened. These are among the most reliable and pleasant signs of recovery the industry knows and, though a long way remains to go, provide a useful index.

Duties of Gas Authorities in Laying Service Pipes.

IT may be well to draw the attention of gas authorities to some judicial observations made in a recent case. An action was brought against a Corporation and their contractors in respect of the death of a man and personal injuries sustained by his widow from a gas explosion, and the defendants were found liable in damages for negligence in using, in carrying out certain road works, a powerful mechanical excavator the teeth of which had broken a service pipe belonging to the gas company, without having taken proper steps to ascertain the presence of the pipe. As regards the gas company, the Court, as reported in *The Times*, said it was unnecessary to ascertain whether they had been guilty of negligence in the laying of the pipe, because in the circumstances their negligence (if any) did not cause the accident, and the Court was satisfied that the pipe was not a nuisance at the time it was caught by the excavator, but it was pointed out to both authorities that under section 8 of the Gas Clauses Act, 1847, the gas company were under a statutory obligation before they broke up the street to give notice to the road authorities, a duty which had not been observed by the gas company in this instance. The Court said there appeared to be an impression that this section only applied in the case of a main, but it applied equally when the road was opened to lay a service pipe, and this fact should be brought to the notice of gas undertakers, for if the law had been properly understood it was possible this accident would not have happened.

Housing Conferences.

During April, May, June and July, eleven housing and town-planning conferences, organised by the National Housing and Town-Planning Council, will be held, and will be attended by members of local authorities. Centres are London, Manchester, Leeds, Newcastle, Birmingham, Nottingham, Bath, Exeter, Norwich, Colwyn Bay and Cardiff. Clerks of local authorities have received letters drawing attention to the serious shortage of modern houses which can be let to lower-paid workers at rents within their means. Sir Enoch Hill, the president of the Halifax Building Society, drew attention to the shortage of such houses at the recent annual meeting of his Society, and mentioned that up to the present time every housing scheme submitted to the Society, which conformed to the conditions and regulations of the Housing (Financial Provisions) Act, 1933, had been accepted by the Board. He referred to the active and sympathetic interest in the Government scheme by the Society. This Act, however, is for private enterprise to provide the smaller houses for workers, and although there are quite a number of schemes in progress, there can be no denying that the Act has not achieved the results hoped for by the Government. It is a pity that the necessary support of local authorities in the matter of guarantees has not been forthcoming in all quarters.

GENERAL NEWS

An Appointment.

Mr. C. C. Shaw has been appointed to the post of Chief Architectural Assistant in the office of the Borough Engineer and Surveyor, Barking Corporation. There were 46 applications.

Proposed Swimming Bath, Swansea.

In our issue of March 23 we stated that Messrs. Mouchel and Partners' tender had been accepted for an open-air swimming bath on the foreshore at a point between the Slip and Swansea Bay Station. This is incorrect, as no contract has yet been placed.

Clifford's Inn.

We reproduce on our frontispiece a drawing of Clifford's Inn, as it is to-day, by Mr. Frederick Adcock. It is stated that the Inn, which includes the old Hall and a number of seventeenth-century houses, is to be demolished, and in its place will be erected blocks of flats and chambers, for which, as we record in our New Buildings in London, the architects are Messrs. Trehearne and Norman, Preston and Co.

Chartered Surveyors' List.

The 1934 list of members of the Chartered Surveyors' Institution is now issued from 12, Great George-street, Westminster, S.W.1 (price 2s.). Besides the full and sectionised lists of members, the constitution of the councils and officers, standing committees, county branches, etc., is given. Also found is the Code of Conduct and schedule of professional charges. It is a book which every practising surveyor should have.

Reconstruction of Weak Bridges.

Mr. Oliver Stanley, Minister of Transport, speaking at the recent annual meeting of the County Councils' Association, and addressed the members on the subject of weak bridges. They must recognise that the time had come for a definite national programme spread over a number of years—he hoped as few as possible—which would end in the elimination of weak bridges as a serious factor in our traffic problem. He was not pretending that such a programme should include all weak bridges, but they had to be certain that wherever, from the economic point of view of the nation, it was practicable that heavy traffic should go it should not be stopped by one or two weak links. He was prepared to offer a 75 per cent. grant for any suitable scheme for the reconstruction of these weak bridges, and on this he had placed no limits. He appealed, therefore, to all concerned for the formulation, as soon as possible, of definite schemes which, over a period of years, would solve the problem.

APPOINTMENTS VACANT

East Ham and Southend-on-Sea Joint Visiting Committee invite applications for the appointments of clerk of works and assistant clerk of works for the new mental hospital at Runwell, Essex. The salaries offered are £10 and £7 per week. Applications, on a prescribed form, must be sent by April 9 to the Joint Clerks to the Committee, Town Hall, East Ham.

East Grinstead U.D.C. invite applications, by April 7, for the post of clerk of works.

An architectural assistant is required in the Department of the County Architect to the North Riding of Yorkshire C.C. The commencing salary is £240. Applications must be made by April 21 to Mr. Hubert G. Thornley, Clerk, County Hall, Northallerton.

One permanent and one temporary junior architectural assistant are required in the office of the East Suffolk County Architect's Department. Salaries are £156. Applications must be made to the County Architect, County Hall, Ipswich, by April 18.

Southampton Corporation invite applications for the position of a clerk of works to supervise the erection of the Assembly Hall section of the new Civic Centre. Applications must be made to the Town Clerk, Municipal Offices, Southampton, by April 16.

Two temporary architectural assistants are required in the Borough Engineer's Department, Huddersfield. The salary in each case is £350. A quantity surveyor is also required, the applicant to state salary required. Applications, to be made on special forms, obtainable from Mr. W. Jaggar, Borough Engineer and Surveyor, 1, Peel-street, Huddersfield, must be in by April 14.

A permanent architectural assistant, a temporary architectural assistant, and a temporary chief quantity surveyor are required in the Housing Department of the Leeds Corporation. The commencing salaries are £320, £265 and £400 respectively. Special forms are obtainable from Mr. R. A. H. Livett, Housing Director, 26, Great George-street, Leeds, 1, and must be returned by April 14.

Three architectural assistants at a salary of £450 and four architectural draughtsmen at a salary of £275 are required by the Dublin Corporation. The appointments will be for a minimum period of five years. Application forms—obtainable from the Secretary of the Commission, 45, Upper O'Connell-street, Dublin, C.8—must be returned by April 9.

The Corporation of St. Helens require an architectural assistant at a commencing salary of £375. Candidates must be registered architects. Application must be made by April 16 to Mr. A. P. Statham, M.Inst.M. & Cy.E., Borough and Water Engineer, Town Hall, St. Helens, Lancs.

COMPETITION NEWS

Proposed Public Offices, Welwyn.

An open competition is to be promoted by Welwyn Garden City U.D.C. for designs for public offices, and the President of the Royal Institute of British Architects is to be asked to appoint an assessor at a fee of 75 guineas. Premiums of £75, £35 and £25 are suggested.

Proposed School, Bedford.

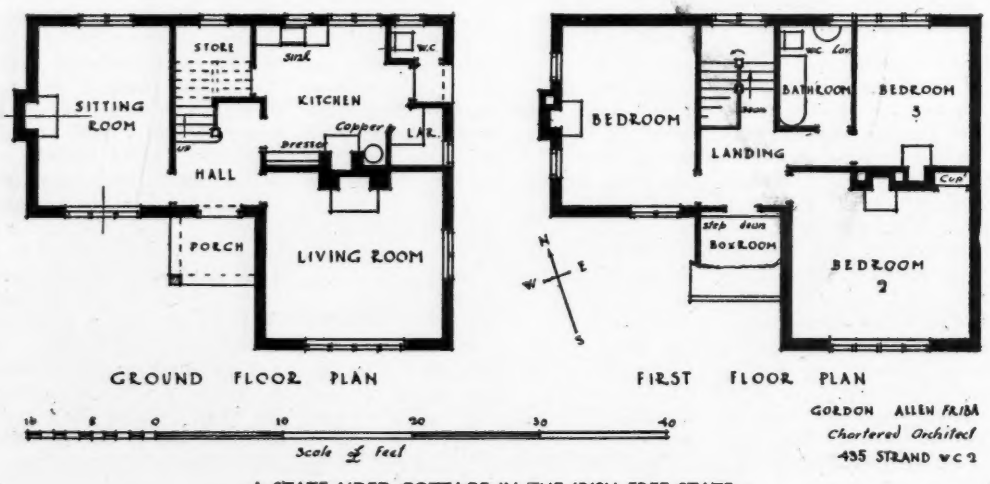
Mr. J. R. Leathart, F.R.I.B.A., has been appointed assessor for a competition proposed by Bedford Corporation for designs for a new school at London-road, estimated to cost £35,000. Accommodation for 920 children is to be provided. It is understood that architects willing to compete will be invited to send in their names, from which list six will be selected to take part in the competition. Conditions are not yet available.

Proposed Council Offices, Bridge-Blean.

At the last meeting of the Bridge (Kent) R.D.C.—which is being superseded by the Bridge-Blean Council—Sir John Prestige said that, when the question of securing new offices for the Bridge-Blean Council was considered, he hoped consideration would be given to the possibility of building a worthy block of offices, and suggested that several architects should be requested to furnish plans. The Chairman replied that the question was being considered.

Proposed Stand, Building Exhibition.

A premium of £100 is offered by Venesta, Ltd., for a preliminary design for a stand at the Building Trade Exhibition at Olympia this year. The competition is open to any architect, designer or student who is ordinarily resident in Great Britain and is under 30 years of age on January 31, 1935. Competitors will be asked to submit rough drawings setting out their preliminary ideas. These will be submitted to a jury of assessors. The competitor whose drawing is selected will be awarded the £100 and will be required to supervise the erection of the stand. Premiums of £10 each will be handed to the four competitors responsible for the designs placed next in order by the assessors. The assessors will be the editors of *The Builder*, *The Architects' Journal*, *The Architect and Building News*, and an architect nominated by the editor of *The Architectural Review*. Mr. Henry Rutherford, managing director of Venesta, and Mr. John Gloag will complete the panel of assessors. The stand is to display Venesta Plywood, Venesta Standard Plywood Flush Doors, and Plymax. Conditions and full particulars may be obtained from Venesta, Ltd., Vintry House, Queen-street-place, London, E.C.4. Designs must be sent in by Saturday, June 23, 1934.



A STATE-AIDED COTTAGE IN THE IRISH FREE STATE.

MR. GORDON ALLEN, F.R.I.B.A., Architect. (See pages 571 and 580.)

CORRESPONDENCE

The A.A.S.T.A. and the R.I.B.A.

SIR,—I am directed by the Council of the Association of Architects, Surveyors and Technical Assistants to inform you that (for reasons stated below) it has decided that the A.A.S.T.A. must cease to be a body officially "associated" with the R.I.B.A.

(1) At the beginning of last year the A.A.S.T.A. requested the R.I.B.A. Council to consider some reduction in the number of new students entering the recognised schools of architecture in the ensuing session. It was pointed out that the number of men entering the profession could not be absorbed, and if a reduction was effected for one year the position could be reviewed twelve months later. The Council of the R.I.B.A. referred the matter to the R.I.B.A. Board of Architectural Education and its Schools Committee. The proposal was rejected as the Board did not recognise any need for action.

(2) The Salaried Members' Committee of the R.I.B.A. was brought into being through the efforts of the A.A.S.T.A. This Committee was instrumental in producing a scale of salaries for official and departmental offices, which was adopted and recommended by the Council of the R.I.B.A.

Recently the representatives of the Association again brought before the Council of the R.I.B.A. a proposal for a basis or guide to salaries of assistants in private offices. This proposal was rejected in principle. Since then the Council of the Association has communicated to the Council of the Institute the seriousness with which this decision is viewed. To this communication no satisfactory reply has been received.

This attitude is inconsistent with the R.I.B.A. maintaining a scale of charges for practising architects and equally inconsistent with the recommendation by the R.I.B.A. of a scale of salaries for official or departmental offices.

It has been established that the R.I.B.A. cannot negotiate the question of salaries, etc., with employing bodies. In the circumstances, therefore, the Association conceives that the continuance of the Salaried Members' Committee of the R.I.B.A. can serve no good purpose, and can only deceive members of the Institute as to the real position. In the view of the Association, the whole effect is to proclaim the R.I.B.A. an employers' organisation. Accordingly, the members of the A.A.S.T.A. who were serving on the Salaried Members' Committee have resigned their seats, and the official representatives of the Association on the R.I.B.A. Council and the R.I.B.A. Board of Architectural Education have been withdrawn.

The A.A.S.T.A. will continue its work (recognised by Parliament) on the Architects' Registration Council and the Registration Board of Architectural Education, and will represent the interests of the salaried group of the profession in all matters arising from this essential field.

A. SEYMOUR REEVES,
Secretary,
Association of Architects, Surveyors and Technical Assistants.
26, Buckingham-gate, S.W.1.

Built-in Aerials.

SIR,—A few enterprising builders are incorporating wireless aerials in the structure of new houses. The idea is good, but, like many good ideas, often falls short of perfection because it is not properly executed. In one case in North London, for example, aerials have been introduced beneath the roof at the front of each villa in a row of twelve. Electric tramcars pass along the main road, with the probable result that reception will be ruined by interference. The use of a rejectostat would be of little advantage in these circumstances.

Had the aerials been erected at the *back* of the houses, as far away as possible from the likely source of interference, the trouble could have been remedied—in fact, completely eliminated—by the employment of a rejectostat. Advice from a radio expert would cost the builders little; it would save the prospective occupiers a great deal of annoyance.

R. W. JENNINGS,
President of the National Federation of House Builders.
St. Stephen's House, S.W.1.

Fairness in Tendering.

SIR,—Evidently fairness in tendering does not extend to the building owner. It is suggested by your correspondent, Mr. Nevill, that contractors should refrain from tendering unless a professional surveyor is employed. In other words, an arrangement is proposed whereby the owner is to be compelled to pay on an extravagant scale for a service which he can, and does, command in free competition for a fraction of the amount. There is no doubt, as you say in your recent article, that the process of estimating by a contractor is more expeditious and less costly than that of the surveyor.

Here I should like to correct a little flaw in the reasoning of Mr. Willis in making his comparison between contractors' and surveyors' estimating costs. Your recent article gave £20,000 worth of successful estimates per annum as a reasonable figure for a small builder from plans and specifications, and stated that £20 would be about the cost per £1,000 job, absorbing all charges on unsuccessful tenders. Note that all unsuccessful tenders are covered in that figure. Taking one in ten as being a reasonable proportion of successful tenders, a total estimating turnover of something like £200,000 is indicated.

If we allow the expense of this tendering at £400, it works out at a percentage of one-fifth per cent. Allowing a margin wide enough to cover all contingencies would barely bring the figure to 1 per cent.

Why, then, should any arrangement be entered into to make it obligatory for a building owner to pay 2½ per cent.?

The plan put forward by Mr. Britten seems feasible where a £1,000 job is concerned. But suppose we consider a garage or similar straightforward job worth £10,000. I can imagine the feelings of the nine unsuccessful contractors if they each received a bill for £25 from the surveyor for a job which in a builder's office would probably be covered by a five-pound note.

I think a course of "debunking" is indicated for professional quantity surveying.

EN AVANT.

NOTES ON THE NEW REINFORCED CONCRETE CODE OF PRACTICE—VII

By C. R. GLOVER, B.Sc. (Eng.), Assoc.M.Inst.C.E.

SECTION 7.—DESIGN—COLUMNS.

THIS section gives rules for the design of the two types of columns used in practice—that is, firstly, columns in which the vertical rods and concrete core are secured by a series of links described in the Code as lateral ties; and secondly, those in which the vertical rods and the concrete core are secured by a continuous spiral of reinforcement. The former type are usually used for columns rectangular or irregular in section, whilst the latter type is used for columns which are approximately of circular section, such as octagonal columns. It will be noticed that in columns with links or lateral ties a minimum amount and spacing of the links is specified, and any additional links do not permit an increase in the estimated safe load for the column. In the case of columns with spiral reinforcement, however, whilst a minimum amount of spiral reinforcement is specified, nevertheless an increase in the amount of spiral reinforcement gives an increase in the safe load for the column. If however, the formulæ for columns with lateral ties gives a greater value when applied to a column with spiral reinforcement, this greater value may be used.

The reduced value of the permissible loads on long columns, which are, of course, dependent upon the ratio of the length to the least radius of gyration and also on the extent to which the columns are restrained, are more favourable than those given by the L.C.C. regulations and appear on the whole to be quite reasonable.

Clause 702 (*b*) requires that bending moments in external columns shall be provided for, and gives rules for the apportionment of the bending moment between the upper and lower length of column, the value being dependent on the relative stiffness of the beam, the upper column and the lower column. In a reinforced concrete framed building these rules may be expected, under average conditions, to give a negative moment at the end of a beam, subject to uniform loading, of the order of $\frac{W1}{24}$. Provision must, of course, be made in the design of the beam for this negative bending moment where the beam joins the external column.

There is no doubt that in the past bending moments in external columns have been ignored, but in these instances the negative moment in the end of the beam has also been ignored, and consequently the columns have been relieved of practically all the bending by yielding or cracking taking place at the end of the beam. The requirements of the Code ignore the possibility of a structure so relieving itself, presumably on the grounds that such relief is only obtained by excessive stresses, and in effect requires the design to be carried out on the assumption that the structure is monolithic. It allows, however, the approximations which it gives to be used, except for cases where special grade concrete is to be used.

SECTION 8.—FLAT SLABS.

This form of construction, wherein the slabs are so designed that they span directly on to the columns without the use of beams, has been in use, particularly in America, for some time and has proved very useful in many instances, particularly in buildings such as warehouses and factories with large open floors and columns spaced at approximately equal distance in both directions. Flat slabs, however, have not been recognised as a form of construction in the L.C.C. and similar English regulations, and consequently very few examples are to be found in this country. It will be noticed that the requirements in the Code relating to this form of construction are set out at considerable length and are more specific than those relating to ordinary slabs. This is, of course, entirely due to the fact that flat slab design is based upon empirical formulæ founded largely upon experience rather than theoretical considerations, and consequently it is not surprising, but is indeed only reasonable, to find that the moments for which the various strips of slabs are to be designed under the Code agree substantially with those set out elsewhere—for example, in the Canadian Standard Specification, 1929.

Some Causes of Dry Rot.

A lecture on dry rot was given to members of the Halifax Building Trades Exchange recently by Mr. A. P. Johnson, who is in charge of the general building, building trades and architectural pupils at the Halifax Municipal Technical College. The lecturer said the disease was very difficult to detect until serious damage had been done. The colossal number of houses, many built since the War, in which the disease was present was due, in his opinion, to imaginary or false economy. Among causes of dry rot were moisture, lack of free circulation of air round the timber, new timber infected by coming in contact with old timber previously infected, absence of dampcourses, porous walls, earth piled outside the walls higher than the dampcourse, and inadequate ventilation.

HIGH CEILINGS

By JOHN ANGUS

In "A Thatched Roof," Mr. Beverley Nichols introduces us to a lady who is a mistress of a multitude of clichés which begin with "I always think." She comments upon the low ceilings—"I always think people must have been much shorter when these cottages were built, don't you?" Mr. Beverley Nichols wonders, and then tells us that this platitude sets free a flock of dreams.

On a more prosaic level it sets free a flock of dreams in the minds of architects, not about the habits or the stature of the people, but about the queer Victorian custom that settled the height of rooms neither by the height of human beings, nor, apparently, by the cubic capacity of rooms, but simply by a mania for "lofty" ceilings!

We realise now the swing of the pseudo-medical pendulum acting upon the public mind. Even to this day the fallacy lingers, unable to distinguish between the height of rooms and the overcrowding of rooms, in their relation to superficial area, cubic capacity and ventilation. Obviously the only way, thirty years ago, for a man to make certain of plenty of ventilation was to live in a room as big and as high as a town hall. And equally obviously many millions of tons of coal were wasted to heat those lofty ceilings to get the air comfortably warm by the middle of the afternoon. It did not dawn upon this age of high ceilings that a room could be ventilated in a few minutes, or, at least, the pseudo-medical mind assumed, through its building by-laws, that as the occupants would not have the intelligence to ventilate a room they must be protected against themselves, and be compelled to have high ceilings. And in that way we inherited the fool-proof conception of huge reservoirs of cold air! Because of that healthy doctrine, or craze, it took a long time to bring a room to that cosy condition of comfort bordering on foulness, and gave a real excuse for polluting the atmosphere with coal smoke. But coal was cheap!

It is amusing to read to-day of architects and building owners appealing to local district councils that their proposed houses on the wind-swept hills of Derbyshire and Cumberland should be allowed to have lower ceilings: they preferred them. But no; the regulations must be obeyed; these lofty ceilings were for their own good.

It required the great war to put a stop to this compulsory diet of surplus air stored in high rooms, and, even now, there is a suspicion that the post-war lower ceiling was born of economy rather than common-sense. One could even hazard a guess that the high ceiling has never been struck off the list of offending building by-laws, but is simply politely ignored. No one questions to-day the benefits of fresh air; he only questions the right of anyone to regulate it for him. One has to be wise and firm amongst a lot of others who are so certain they know what is best for one. For instance, it has been stated by the medical profession, as an axiom, that the first necessity of the poorest is warmth, yet another medical theory made their high rooms unnecessarily costly to warm!

We may take it, therefore, that it is generally agreed now that a room intended for four people will be uncomfortable if on odd occasions it has to accommodate a dozen, and that the occupants will have the sense to open a window to ventilate the room. It is rather a profound discovery; it is certainly much more sensible to be allowed to build a room for ourselves than to be compelled to build storage capacity of air for our unknown number of visitors.

But in this flock of dreams let us be fair to the Victorian age. It is the easiest thing in the world to accuse that age of every conceivable form of crime and even cruelty in its housing arrangements, but if it can be accused of meanness in its miserable little plots of land and its backyards, it was undoubtedly generous in its high ceilings. No doubt the dull dogs who must find a material explanation for everything will attribute this generosity to the by-laws, and will refuse to give credit to the age that makes its by-laws.

Perhaps we are wiser to-day. We do not want wasted height in our rooms; we want more room around our houses. It will be left to the next generation to laugh at our efforts that make neither a city nor country, but one continuous monotonous suburb. Even so, I think that the lady who always thinks will remark about our low ceilings—"I always think people must have been much wiser when these cottages were built, don't you?"

CONTROL OF BUILDING ELEVATIONS

We have received from the Secretary of the Institution of Municipal and County Engineers a copy of a letter on this subject which has been circulated among local authorities. The text of the letter is as follows:—

I am directed by the Council of this Institution to refer to the Report entitled "The Elevation and Siting of Buildings" prepared by a Joint Committee of the Royal Institute of British Architects, the Council for the Preservation of Rural England, the Institute of Builders, and the Institution of Municipal and County Engineers. It will be noted that the Report is signed by the chairman as a majority report. The representatives of this Institution were in the minority, and my Council instruct me to lay before you the following reasons for their disagreement.

My Council are in full sympathy with the general object of the Joint Committee, viz.: "to grapple with the danger to the amenities of Great Britain from unsightly building." They feel that the adoption of an amenity clause is a matter of policy upon which they should not seek to influence local authorities, but where such a clause is introduced they are of opinion that it should be administered by the authority itself with the advice of its technical officers.

In the Ministry of Health Circular No. 1305 on the Town and Country Planning Act, it is stated that "taste is not a matter for dogmatism. The powers (to regulate the design and external appearance of buildings) should be used for preventing what may be reasonably regarded as 'outrages,' buildings out of keeping with their surroundings and an offence to the neighbourhood."

It is stated in the Report that "there would appear to be some difficulty in attempting to control design on the basis of the personal taste of the official who is dealing with compliance with strictly definite by-laws"; and that such official "would be likely to find himself from time to time in an embarrassing situation."

My Council see no difficulty in an official directing the attention of his authority to proposed elevations that seem to him to be undesirable. On the contrary, they believe that an embarrassing situation would be far more likely to arise in the case of a panel of architects being called upon to pass judgment on the work of someone engaged in the same profession as themselves. This is supported by the fact that in many cases the work of architects and artists—some of considerable eminence—has been most severely criticised by their professional confrères and public opinion.

To be effective, the proposal involves the submission to the Advisory Committee of every plan of a building requiring the approval of the Town Planning Authority. My Council would point out that this would undoubtedly create much delay and hardship, and in the case of towns where large numbers of plans require consideration, the proposal would be found impracticable.

It is understood that the object is not only to control elevations but to require that they should maintain the character of the street and amenities. In many cases, therefore, the Advisory Committee could not properly decide upon an application without previously inspecting the site and its surroundings. This will obviously result in expense and delay, especially as at least the architect members of the committee should be from outside the area concerned.

In addition, there is risk of considerable hardship to individuals by reason of the possibility that some committees so constituted may take an extreme view of what is appropriate in the circumstances of a case, and require alterations in design which may seriously increase the cost, and in some instances even prevent the realisation of a perfectly legitimate commercial, industrial or personal project.

I am directed to ask that your authority will give consideration to these views when dealing with the question of the control of building elevations, on which the Institution advises the local authorities should retain the right of decision, with appeal to a court of summary jurisdiction as provided under the Act, although as an Institution we consider it preferable that appeals should go to the Minister of Health.

OLD ST. PAUL'S IN MODERN SETTING

In connection with the illustrations showing the use of photographs in the representation of mediæval buildings, reproduced on pages 574-5, Mr. Cecil Brown writes as follows:—"At this time, when so much thought is being given to the future development of London, it is, perhaps, not amiss to look back and consider how London might have appeared if some of its principal mediæval buildings still stood in the midst of twentieth-century development. By the Parallacter system of working on photographs, devised by Mr. J. W. Gordon, K.C., and described in the current number of the Journal of the Royal Institute of British Architects, it is now possible to project on photographs any desired object of known dimensions in true perspective. In the examples shown this system has been utilised in showing Old St. Paul's as it appeared previous to the fire of 1561. It would still dominate London as the Cathedrals of York, Lincoln and Canterbury dominate those cities. In the sixteenth century Stow described the cathedral as 'a minster of such worthy, strong and costly building, so pleasant and so delectable, it passed all comparison, not only of minsters within this realm, but elsewhere, as sure as travel has taught us, in other realms, either Christian or heathen.' From early times travellers refer to its beauty and magnitude with its 'most famous and incomparable Campanile.' The cathedral stood for nearly six centuries, witnessing many changes, and was finally destroyed after the Great Fire of 1666. What the destruction of so noble a structure must have meant to the citizens of London is beyond estimate. Let us do all we can to ensure that the upward development of London does not totally obstruct those views of Wren's masterpiece consciously and unconsciously loved by so many. The disappearance of St. Paul's from London's skyline would indeed be a calamity. I should like to express my indebtedness to Mr. Godfrey Allen, surveyor to the Dean and Chapter of St. Paul's, for the loan of the photographic negatives upon which the additions were made."

"Facts about British Railways."

The recovery of British Railways has been a favourite topic in recent months, and the annual meetings of the various railway groups which are now being held lend particular interest to the fifth issue of this booklet. It contains many interesting facts about the railways of Great Britain which may be of interest to our readers, who may obtain copies free upon application to British Railways Press Bureau, 35, Parliament-street, S.W.1.

INTERNATIONAL HOUSING AND HOUSING CONSTRUCTION

A DETERMINED attempt to do away with the slums is projected, and an endeavour is being made not only to raise the standard of dwellings generally, but also to lower the building costs. It is not by any means in this country alone that the problem presses for solution; consequently, an International Housing Congress has been arranged for by the International Housing Association to take place in Berlin, and an international inquiry was instituted which it was felt would be useful, amongst other purposes, for the preparation of the discussion thereat.

The results of this inquiry have been treated by Professor Franz Schuster, architect, of Frankfort-on-Main, and give comparative details of various European countries' progress in housing. For instance, the ground plans and their inside fittings are given for each country in a general way; and, as far as is possible, the following points are referred to, not so much as they affect any particular country, but in a sort of "average" manner in which they may be helpful in having a general bearing on the subject. The following are the headings of this general subdivision of the subject :—

A.—Comprehensive ensemble plans : Kind of buildings used, and density.

B.—Ground plans; standardisation; regulations for dwellings built with public means; minimum areas; normal height of rooms; heating of dwellings; kind of kitchen predominating (small working kitchen or living-room kitchen); bath in dwelling or central baths; wash-houses; built-in cupboards; standardisation of building parts; centralised system of purchasing building materials; concentrating of building activities into large groups, blocks and complexes; cheapening of construction by new kinds of materials, special methods, or any other measures.

The social importance of housing now and in the future led the Association to invite discussion by an international circle of experts mainly on these two points which past experience has proved to be the crux of the matter.

A general report by Senator Dr. F. M. Wibaut, of Amsterdam, President of the International Housing Association, has been published by the Association under the title of "Public Utility and Private Housing Activity," which summarises and compares the information given in detail in Congress Publication II. In this general report the subject is considered under the following headings :—A.—Dwelling-house building and its promotion on the part of the State, the communities and public utility building societies. B.—The administration of dwellings built in accordance with the principles of public utility, and the social and educational work connected therewith. C.—To what extent under present conditions is private building enterprise on a profit-producing basis able, without the support of public means, to provide the necessary dwelling accommodation for the masses of the population in a way which will satisfactorily fulfil all economic, social, hygienic and other modern requirements? and—How can building enterprise be organised so as to ensure the need for small dwellings being met in a satisfactory manner?

Experience having taught that it is essential for the success of any housing project whatever that the rent payable by the tenant must be adjusted to income, and that as this figure does not represent what private enterprise has established as a fair and reasonable return for capital invested it is obvious that, unless private building enterprise is to become a charitable service, it will be necessary for there to be some form of State assistance in the form of a subsidy. Who pays this eventually may be an interesting subject for investigation, but it does not affect the building trade any more directly than the rest of the community

Further, to the end that the building of economic housing may be achieved, with, if possible, no subsidy, but if not, that the subsidy should be kept small, investigation and research are being conducted into the problem of reducing building costs; and, as seems obvious, since wages cannot be lowered without reducing the amount possible to be paid as rent, the only course open is to search for some form of construction which will provide the accommodation at less cost. This result may be effected either by the saving of materials, the use of cheaper materials, or by using materials which cost less when erected because they take less time to erect.

With this in view, research turns readily to the idea of mass-production building and the standardisation of units, in an enthusiasm which is in danger of overlooking the fact that, though such products may take less time to erect, they require to be manufactured and that cost of manufacture will have to be paid by someone and will inevitably appear, sooner or later, in the cost of the building. The reports, from every country taking part in the building of small dwellings at reasonable rents, referred to above, all agree that, so far as research has developed, no very definite success has as yet attended factory production of entire buildings—though standardisation of details, such as doors, window frames, glass, etc., is in vogue to some degree in all the countries.

Nevertheless, considerable research is being undertaken, particularly in the U.S.A., France, Germany and the U.S.S.R., into this problem of standardisation and the use of materials other than clay products and timber for mass-production building. In particular, the U.S.A. has experimented with steel as a substitute for most of the materials more customarily used. Steel has been used, for instance, for walls, floors (joists and surface) and roof coverings, and even more recently a system has been devised of pre-cast units having the walling composed of T-section reinforced concrete units set vertical and extending from floor to floor. This system is one known as the Mopin System, so called after its designer, M. M. E. Mopin, a French civil engineer, and for it is claimed that it is likely to achieve considerable reductions in cost as compared with brick or the brick-filled steel-frame constructions. It is claimed that this system is already beyond the experimental stage, as several buildings have been erected in France, the two principal schemes being La Cité du Champs des Oiseaux, at Bagneux, Paris, costing £400,000; and La Cité Muette, at Drancy, Paris, costing about £1,200,000.

The principal of this system involves the use of small, pre-cast reinforced concrete units for attachment to a steel framework. The pre-cast wall units, of T-section, are set vertically and extend from floor to floor in width usually of 12 in., and from these blocks rods are left projecting at top and bottom to be bent round the steel members. The internal spaces are then filled in with poured concrete. Interior walls and partitions are of vibrated concrete, and span from floor to ceiling in one length. Cellular concrete is used where lightness is desirable, and it is also serviceable as a sound-and-heat insulator. Partitions are fitted into slots in floor and ceiling, and the finish does not require plastering. For the floors the following alternative methods have been devised :—Pre-cast vibrated concrete tee-beam joists butted together; beams in the form of a "U" with intermediate panels; panels cambered on the undersides between reinforced concrete filler joists; flat panels between steel filler joists at centres up to 4 ft.

It is claimed, further, that this system affords opportunity for economy if the building scheme is planned to make the fullest use of repeating plan units, and the work in factory and on the site is organised to save waste in time and labour. The cost of this system would seem to be mainly factory cost, and consequently, the larger the building the cheaper per foot cube; and though at present it contravenes the London Building Act, as do most suggested new methods of construction, it is possible that such a system might be serviceable in the construction of tall type-plan blocks of flats on the lines of those now being erected on the Continent; and though, of course, the planning would require to meet our more stringent requirements from a sanitation point of view, the same principles of the minimum habitable area and narrow frontage per flat might be used to advantage.

TOWN AND REGIONAL DEVELOPMENT

THIS work,* which was published in November last year, is the latest addition to the many text-books and guides that have been produced to assist both the officials concerned in the administration of the complicated legislation contained in the Town and Country Planning Act, 1932, and the public affected by it, in acquiring an acquaintance with its provisions. The author, who is the organising secretary of the International Federation of Housing and Town Planning, writes with experience. This little volume commends itself to us, for in the ninety-six pages which form the actual original text the author appears to have contrived to convey in simple language a very clear guide to the Act, in which the several stages of procedure are set out in most convenient order.

In an interesting introductory chapter the author traces the progress in town and regional development, and expresses the opinion that in the future we must have a national development plan, to be prepared by a permanent national planning and development commission. The author states that the chief function of a national plan would be the distribution of population and industry in the interests of national economy and the public welfare, and apparently this would be effected by the correlation of such services as transport, power distribution, water supply, schools, and all the public services necessary for ensuring development, but with powers to protect all agricultural land. Although the author expresses a doubt whether our present town-planning policy can be characterised as a "policy" at all, he is careful to point out that his scheme would not interfere with the existing system, which in the meantime is useful in safeguarding many of the amenities pending the preparation of the national scheme.

Turning now to the main body of this volume, we may state that the text, which is clearly printed and expressed, carries marginal references to the Act at the side of each paragraph, which enhances its value as a work of reference, and that in the appendices, which commence at page 97, are contained a reprint of the Act, and the Provisional Regulations, 1933, the General Interim Development Order, 1933, the General Transitional Order, 1933, the Acquisition of Land (Assessment of Compensation) Rules, 1919, and the Town Planning (Determination of Questions as to Compensation) Rules, 1926, followed by an index.

It appears to us that this little volume may even prove of service to those who have to use the complete legal text-books, as, owing to the method in which the subject has been treated, or grouped, it affords great facilities in ascertaining the references to any particular question, and thus may provide a key to the detailed information contained in larger works.

The Architecture Club.

The Fourth Supper-Discussion of the Architecture Club will be held at the Architectural Association, 34-36, Bedford-square, London, W.C.1, on Thursday, April 12. After supper, at 7.30 p.m., there will follow a discussion at 8.30 p.m. on "Street Furniture and Street Advertising." Mr. Robert Atkinson, Professor S. D. Adshead, and others will take part.

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* "Town and Regional Development." A Guide to the Town and Country Planning Act, 1932. By H. Chapman. London: J. M. Dent & Sons. Price 10s. 6d. net.

ILLUSTRATIONS

PLATES.

St. Michael's Church, Bishopwearmouth.

This thirteenth-century church, the parish church of Sunderland, which formerly consisted of nave, aisles and chancel, had an early classical tower of uncertain date. The church had suffered many unfortunate vicissitudes during the last century. In 1806 the nave arcades were taken out and the aisle walls raised to the height of the original clerestory, and over the rectangular space so obtained a low-pitched roof of heavy timber construction, with a flat ceiling, was carried from wall to wall. Extensive galleries around the sides and west end were added. In the 'sixties of last century transepts were thrown out and the tower was partially Gothicised in the style of the period. Within the last few years the whole of the edifice has been seriously disturbed by colliery workings, and the resulting dislocation and weakness of the raised aisle walls and the ponderous roof became so dangerous that demolition had to take place. It was possible to preserve the tower, chancel and parts of the transepts only. These have been incorporated in the new design, the old work being underpinned and the whole carried upon a reinforced concrete grid capable of withstanding such moderate earth movements as may in future be expected from the new disused workings. Double aisles have been added to the original extent of the church, to compensate for the loss of the galleries.

The architects are Messrs. Caröe and Passmore, F. and A.R.I.B.A., of Westminster, and the builders Messrs. John Thompson and Sons, Ltd., of Peterborough. The work is being executed in Clipsham stone.

Broadhurst Manor, Horsted Keynes, Sussex.

Until recently, all that remained of this building was the kitchen wing, incorporating the three fine chimney stacks of the original E-shaped manor house. The plan of the house as it probably stood some 400 years ago could be partially traced by the remains of foundations standing in the grounds.

The owner undertook the reconstruction and additions shown in the illustration some few years ago, and gave careful attention to the gradual development of paved terraces, sunk and walled gardens and approaches to the adjoining lakes, which form an ideal setting to the manor house.

The interior contains a fine staircase and some exceptionally good Jacobean panelling and stone fireplaces. Care has been taken to build the new wing with old brick, local stone and Horsham slab roof, in keeping with the original work.

The architect for the reconstruction and additions was Mr. L. Keir Hett, F.R.I.B.A., of Messrs. Searle and Searle, and the work was carried out by the owner's skilled tradesmen.

Andhra University, Waltair, Madras.

The site of this university commands a magnificent view of its surroundings, with Dolphin's Nose and Vizagapatam Harbour on the south-west and the Bay of Bengal on the south-east, with hills further north forming the background to the buildings in general perspective. The site, which is away from traffic and industry, comprises about 53 acres, and the ground falls towards the sea, which is within a distance of about a furlong. The general scheme is based on the central axis on which Jeypore Vikrama Deo College of Science and Technology is built. The college will have a clock tower in the centre, over the main staircase, 90 ft. high from ground level. The University College of Arts is on the west, and will have an observatory over the central staircase. The hostels are on the extreme north. The scheme facing the sea will be complete when the Convocation Hall and Library are built, with a similar building on the south-west in place of the present office. A parallel and similar building to the Arts College on the east would probably form a complete unit for the university buildings for many years to come. At present there are three blocks of hostel buildings, each with three floors, accommodating about 130 students. All the rooms are single rooms and well ventilated. There will be two common rooms, one to serve as reading-room and the other for indoor games. The buildings are constructed of local stone of rather reddish tint. The cost of the present scheme is over Rs.800,000, which works out at annas 3 per cubic foot approximately.

Mr. L. M. Chitale, F.R.I.B.A., A.M.T.P.I., is the consulting architect.

The "Hermitage" Cinema, Hitchin.

This new cinema is of steel construction, faced with 11 in. hollow brick walls. The steel construction of the balcony embodies a new method, introduced by Messrs. Dawnay, of taking the forward thrust towards the stage by a main girder construction shaped on plan like a letter A, the ends of the legs bearing on side wall stancheons and the apex on rear wall stancheons. On the balcony steel fillers, to form the tiers, there are placed 3 in. reinforced coke-breeze concrete slabs made on the job, and the curved risers are of 4½ in. brick, built on the back of the slab below. This method, it is claimed, effects a great saving on what is ordinarily done. The roof is covered with Trafford tiles. The cinema is sideways on to the road, and the design of the front had to be adapted to breaking up the great length in a pleasing and decorative manner. This was done by using decorative brickwork in Luton grey bricks, diapered with purple headers, and combining with this, light cream "Snowcrete"-faced concrete, cast *in situ*, for the base, the cornice, and for the arched balconies at each end. The cinema has a full theatre stage, with scenery, loft and dressing-rooms, also a spacious tea-lounge. An unusual feature is the large amount of covered queueing space, which accommodates 800 persons, of whom one-half can sit whilst waiting. The queues are so planned that they serve all parts of the cinema on opposite sides to exits, and as all persons in the queues have already passed a paybox and obtained tickets, a full audience of 1,350 can be changed entirely without haste or scramble in seven minutes.

The auditorium is planned on converging lines, and has a flat ceiling. This design, combined with a special soft plaster of decayed mica-earth on the walls, known as "Zono" plaster, gives perfect audition. The ventilation is by the Plenum system during performances, and natural at other times. The walls and ceilings throughout are sprayed solid with dull gold metal relieved by ceiling and wall lights, and by an ornamental lay-light in the ceiling. The proscenium curtain, by Messrs. Hall and Dixon, is in gold velvet embroidered with jade green bands. The cinema makes its own electricity by means of two Lister Diesel engines coupled direct. A storage battery of 52 D.P. cells acts as a float, and also supplies the emergency and daytime lighting. The operating room is equipped with two "Kalee" projectors with high intensity arcs, and adapted to the British Thomson-Houston sound system. The screen is of finely perforated white rubber. Care in planning enables the cinema to be run with a minimum number of attendants, and one paybox serves every part of the house.

Mr. Edgar Simmons, F.S.I., is the architect.

Conversion of Stables into House.

Situated at the rear of South Audley-square, W., No. 5, Waverton-street, was originally the stables and servants' quarters belonging to it. The present owner purchased the stables and a small portion of what was kitchen offices with the idea of transforming these into a comfortable house. The general structure was in good order and not much alteration was required except on the ground floor. The feature of the house, as now remodelled, is the entrance hall and lounge, which are unusually spacious. The top floor, not shown on the plans (see page 591) contains two more excellent bedrooms and a bathroom. The house contains numerous large beams which, together with the broken-up character of the plan, rather suggested a simple old English treatment, and this has been followed. The ground floor walls are panelled in oak to a height of 7 ft., and the plaster above is colour-washed a simple cream. The main floors are oak parquet. Very simple modern electric light fittings have been used, of the concealed light type, the colour being kept a yellow tint to harmonise with the natural colour of the oak. In the upper floors the detail generally was of a simple late Georgian character, and this has been followed in the new work and fireplaces, etc. The fireplace in the lounge is of sand-faced two-inch brick and tiles, and contains an open hearth with a large wrought-iron dog grate specially made for the room by the Devon Smithy.

The heating, except for three coal fires, is by electric radiators on the Unity system. The kitchen range is electric, and the water is also electrically heated. A liberal supply of power plugs has been provided. The entire heating and lighting system has been devised with a view to labour saving.

Mr. P. L. Dickinson is the architect.

Museum Building, Zanzibar.

This building is an extension of the existing Bet-el-Amani Museum, and is intended to house specimens relating to biology, parasitology, agriculture and public health, for which space cannot now be found in the old building. The walls are constructed of Winget concrete blocks, the floors of teak or of reinforced concrete with tiles, and the roofs of reinforced concrete, with Blackwell's bitumen roofing fastened to brass bolts let into concrete without timber. The outside has been rendered in "Snowcrete" cement, waterproofed. Crittall's steel casements have been used for the windows, and all joinery is in teak. The general style of the building is as far as possible in keeping with local Arab tradition. The Public Works Department carried out the work under the supervision of the Government architect, Mr. P. C. Harris, F.R.I.B.A.

Bus Waiting Room and Petrol Station, Hong Kong.

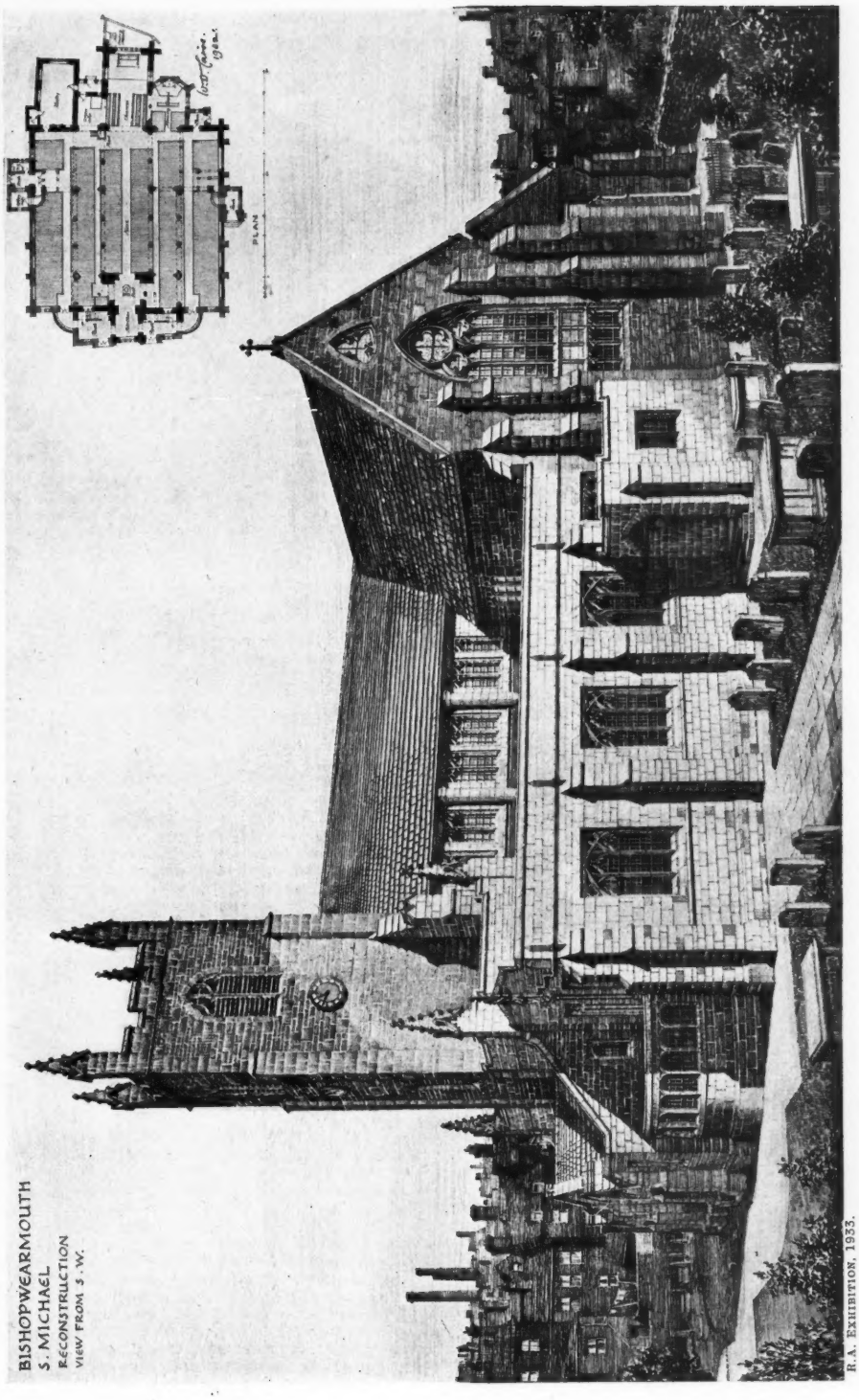
This bus waiting-room and petrol station has been designed for the Garage Department of the Hong Kong and Shanghai Hotels, Ltd., in Shaukiwan-road, Hong Kong. The smaller compartment is for the accommodation of an official regulating the buses and supplying petrol, and the larger compartment for the passengers' waiting room. The structure is over a nullah, supported on a reinforced concrete slab, the slab being carried by the nullah walls, the water in the nullah flowing under the structure into a large conduit leading to the harbour. The roof covering is of green glazed Chinese tiles, which are segmental and laid in a space between battens running from eaves to ridge, the space between the battens then being covered by a half-round tile, this having a slight lap over the segmental tile. The walls are rendered and coloured to match the colouring of the company's buses, with the exception of the base, which is of Canton brick, light green in colour. The interior is of plaster, the walls painted "Chinese fashion" with Chinese mottoes, in Chinese, as a frieze.

Messrs. Geo. W. Grey, F.R.I.B.A., F.S.I., and J. Bentley Hawker are the architects.

A State-Aided Cottage, Irish Free State.

This house (see pages 571 and 576) is now being built at Piltown, Co. Kilkenny, with the help of a Government grant of £70, the design having recently been approved by the Irish Ministry for Local Government and Public Health. All the walls are of concrete blocks made on the site. The external walling is 9 in. thick, rendered in cement, and the roof is slated. The accommodation, suitable for a smallholder, consists of three bedrooms, two sitting-rooms, kitchen, bathroom and plenty of storage space. Mr. J. R. Anthony is the builder.

Mr. Gordon Allen, F.R.I.B.A., is the architect.



RECONSTRUCTION OF THE CHURCH OF ST. MICHAEL, BISHOPWEARMOUTH: View from South-west.

MESSRS. CARÖE AND PASSMORE, F. and A.R.I.B.A., Architects.

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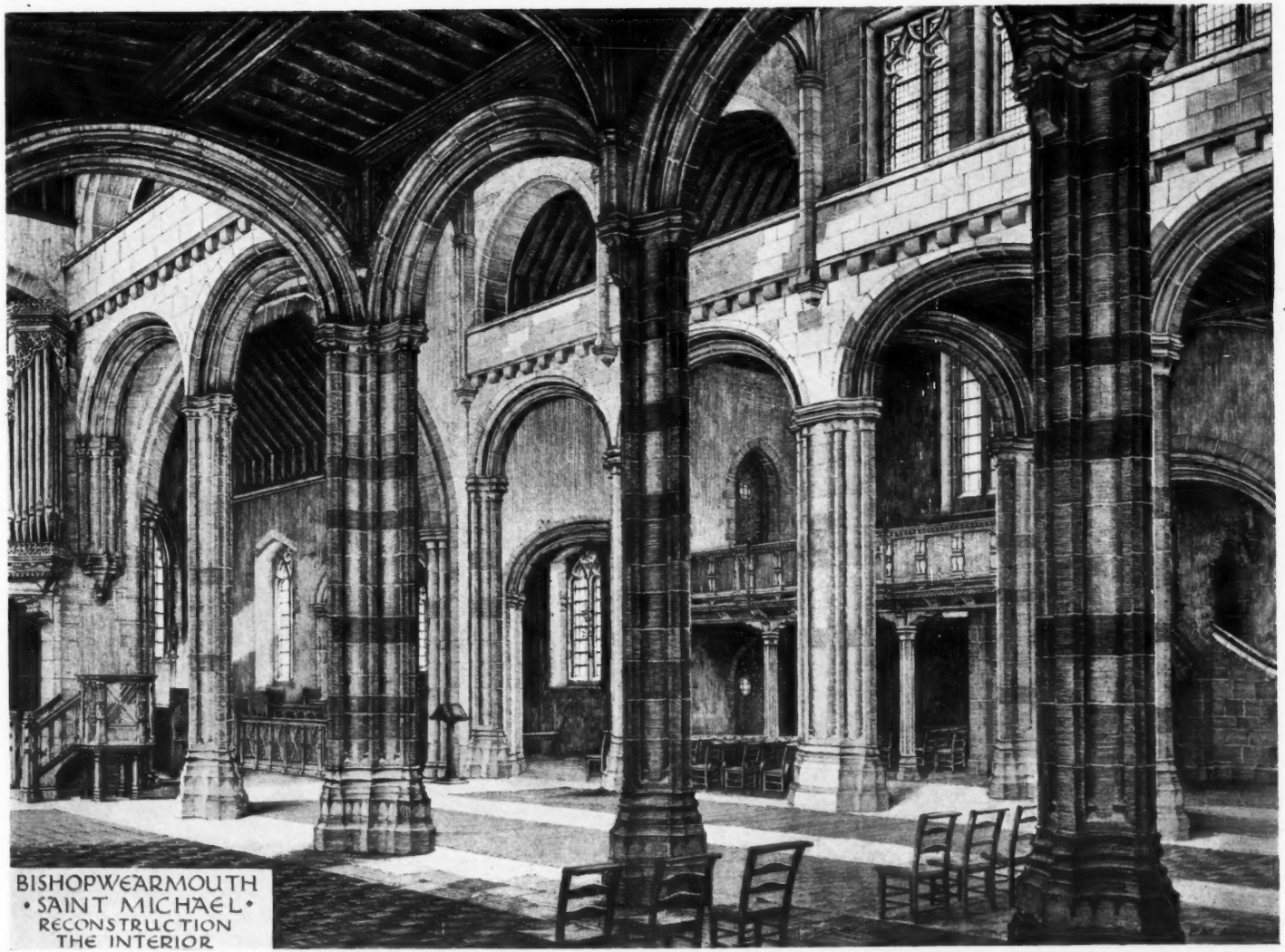

R.A. Exhibition, 1933.

RECONSTRUCTION OF THE CHURCH OF ST. MICHAEL, BISHOPWEARMOUTH : The Interior.

MESSRS. CARÖE AND PASSMORE, F. and A.R.I.B.A., Architects.

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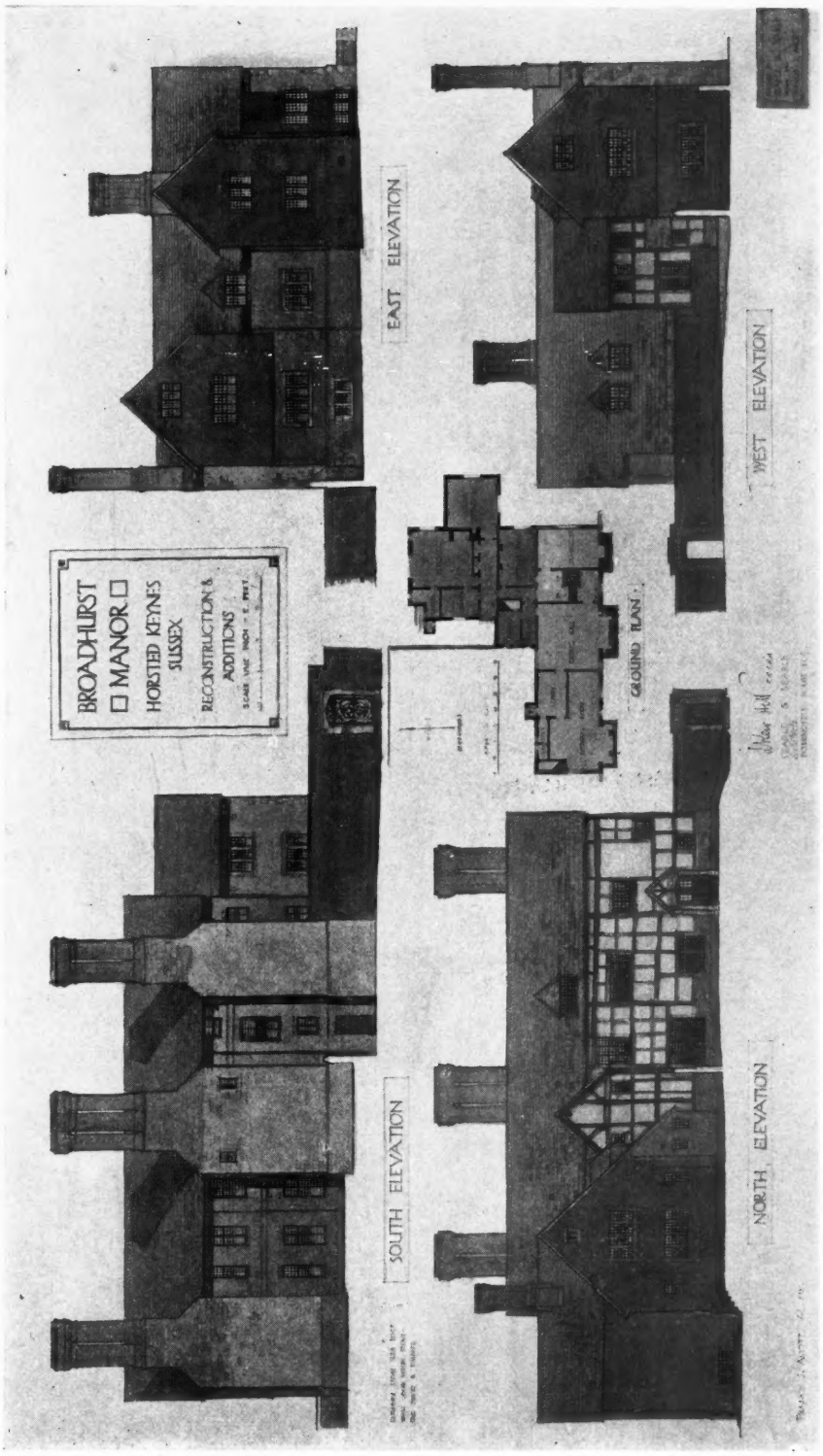

BROADHURST MANOR, HORSTED KEYNES, SUSSEX: Reconstruction and Additions.

MR. L. KEIR HETT, F.R.I.B.A. (MESSRS. SEARLE AND SEARLE), Architect.

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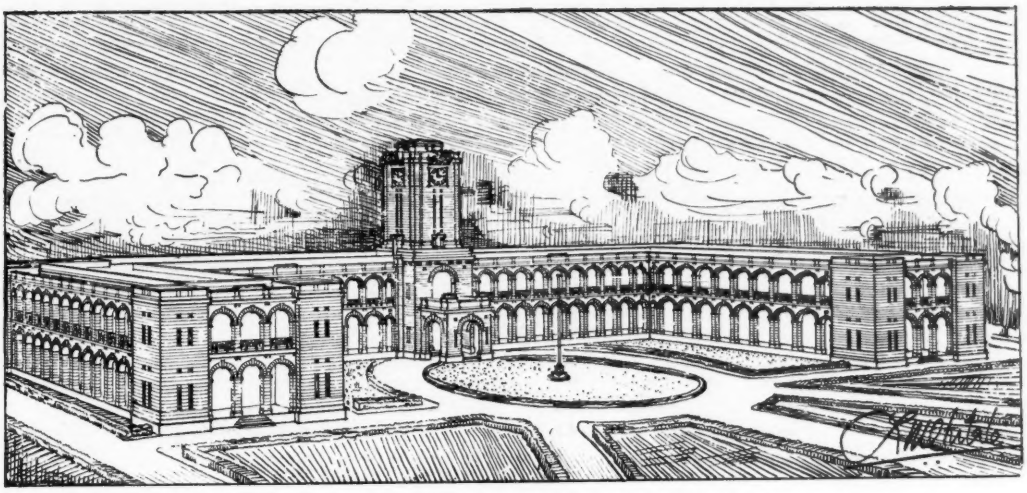
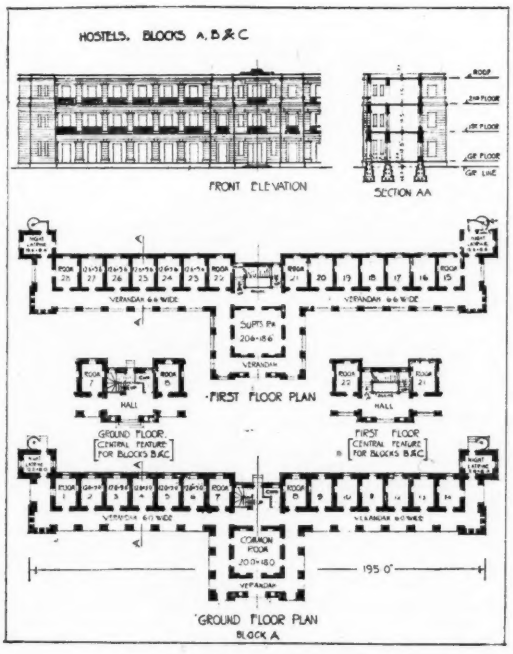
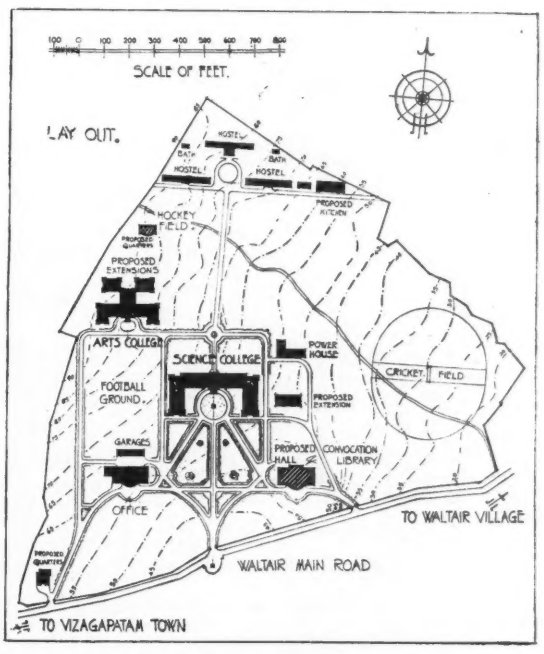


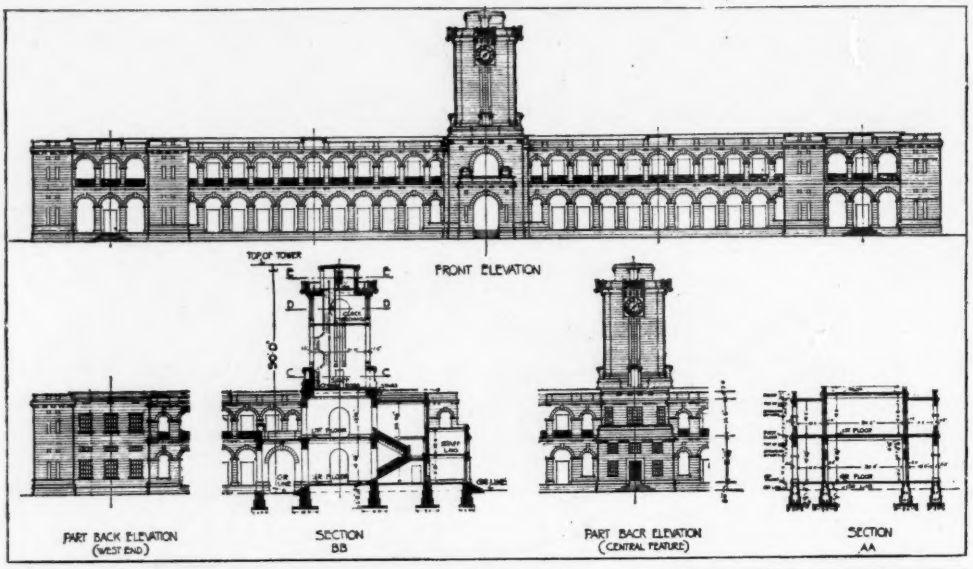
College of Science and Technology.

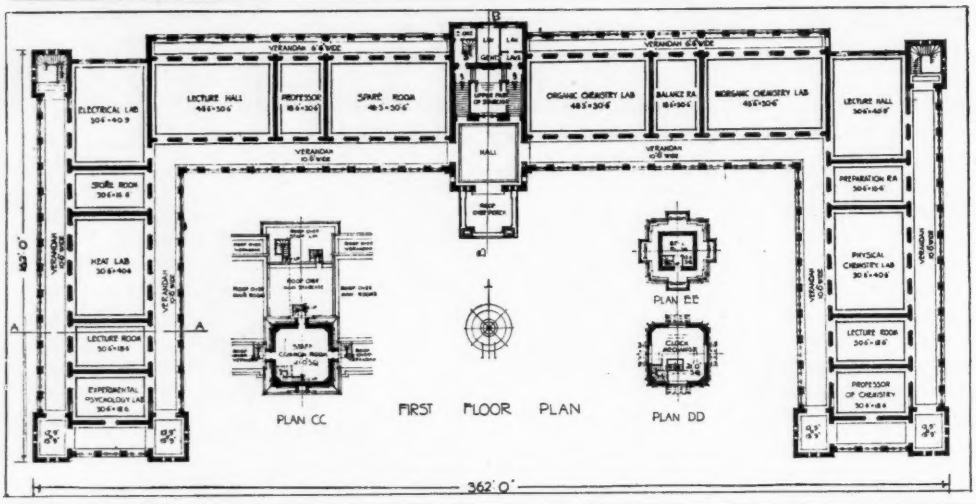


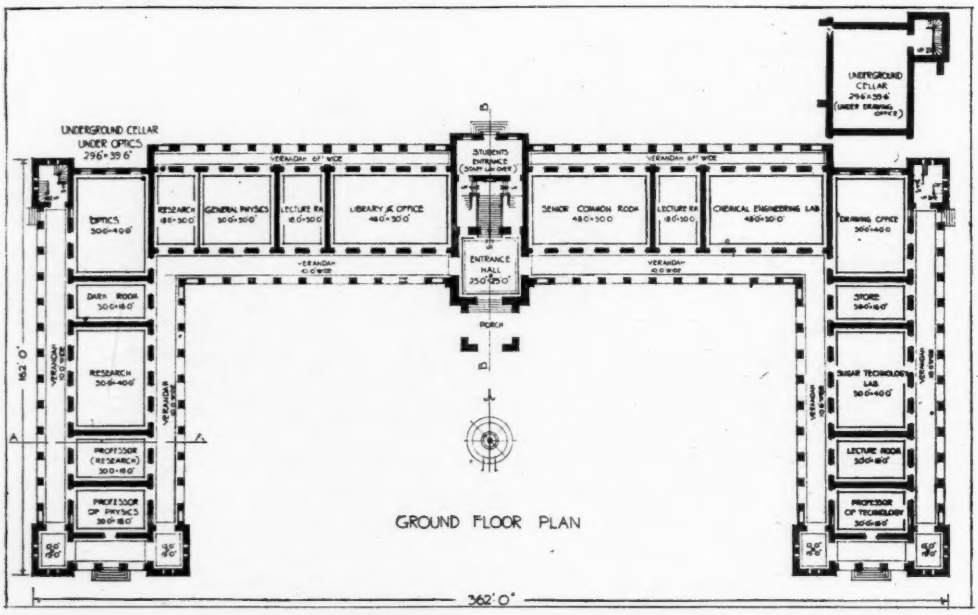


THE UNIVERSITY COLLEGE OF ARTS, ANDHRA UNIVERSITY, WALTAIR, MADRAS.

MR. L. M. CHITALE, F.R.I.B.A., Consulting Architect.

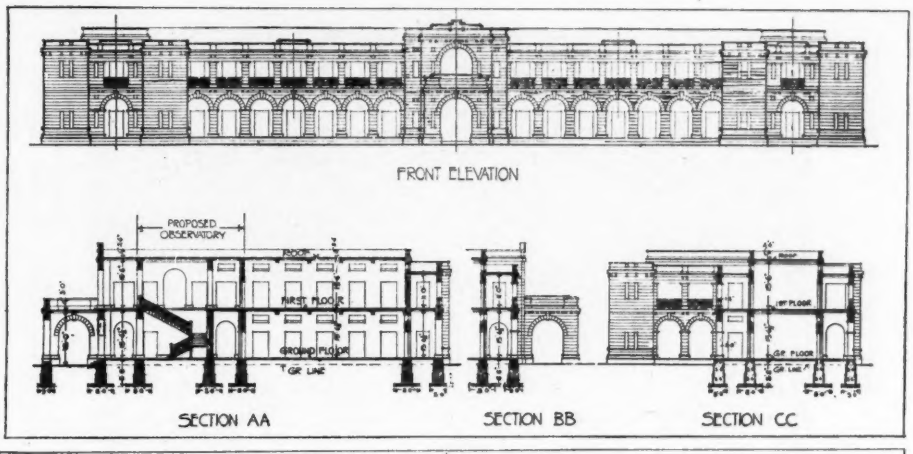


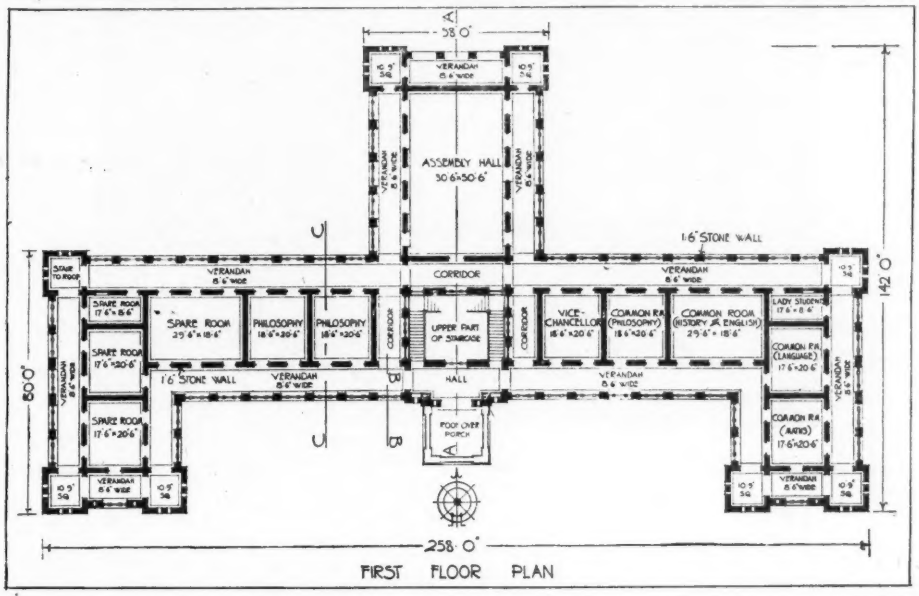


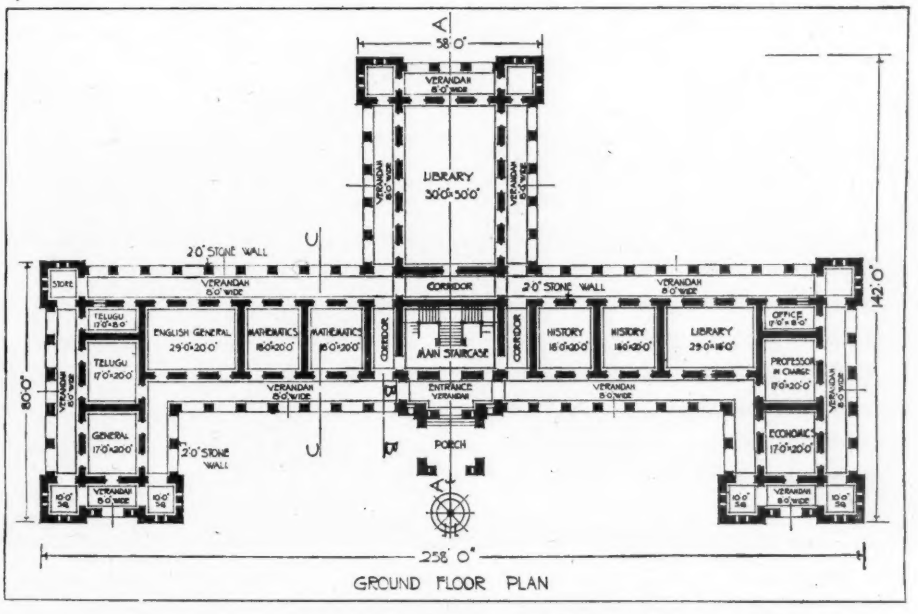


THE UNIVERSITY COLLEGE OF ARTS, ANDHRA UNIVERSITY, WALTAIR, MADRAS : Science College.

MR. L. M. CHITALE, F.R.I.B.A., Consulting Architect.







THE UNIVERSITY COLLEGE OF ARTS, ANDHRA UNIVERSITY, WALTAIR, MADRAS : The Arts College.

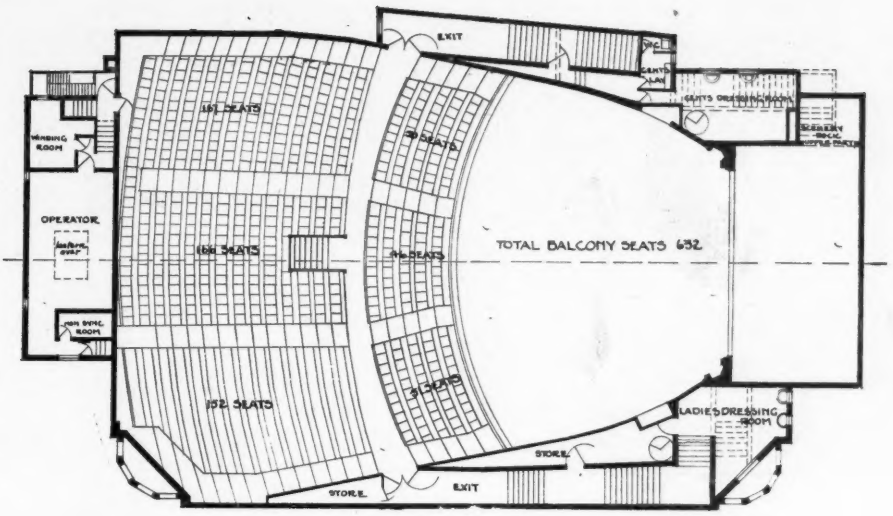
MR. L. M. CHITALE, F.R.I.B.A., Consulting Architect.

AUDITORIUM, FROM BALCONY.

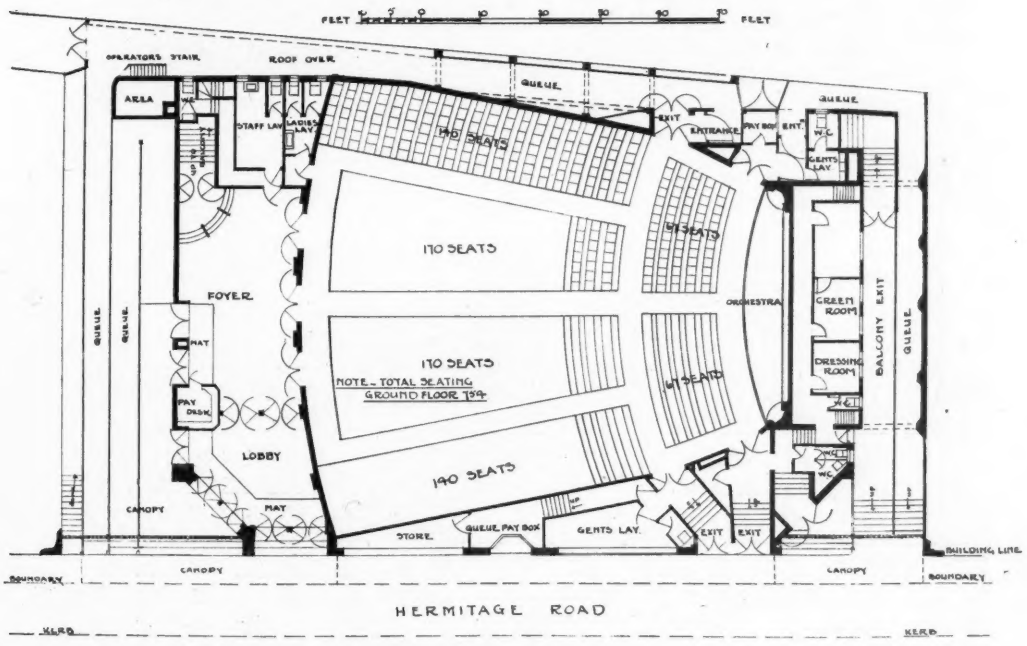
ENTRANCE FRONT.

THE "HERMITAGE" CINEMA, HITCHIN, HERTS.

MR. EDGAR SIMMONS, F.S.I., Architect.



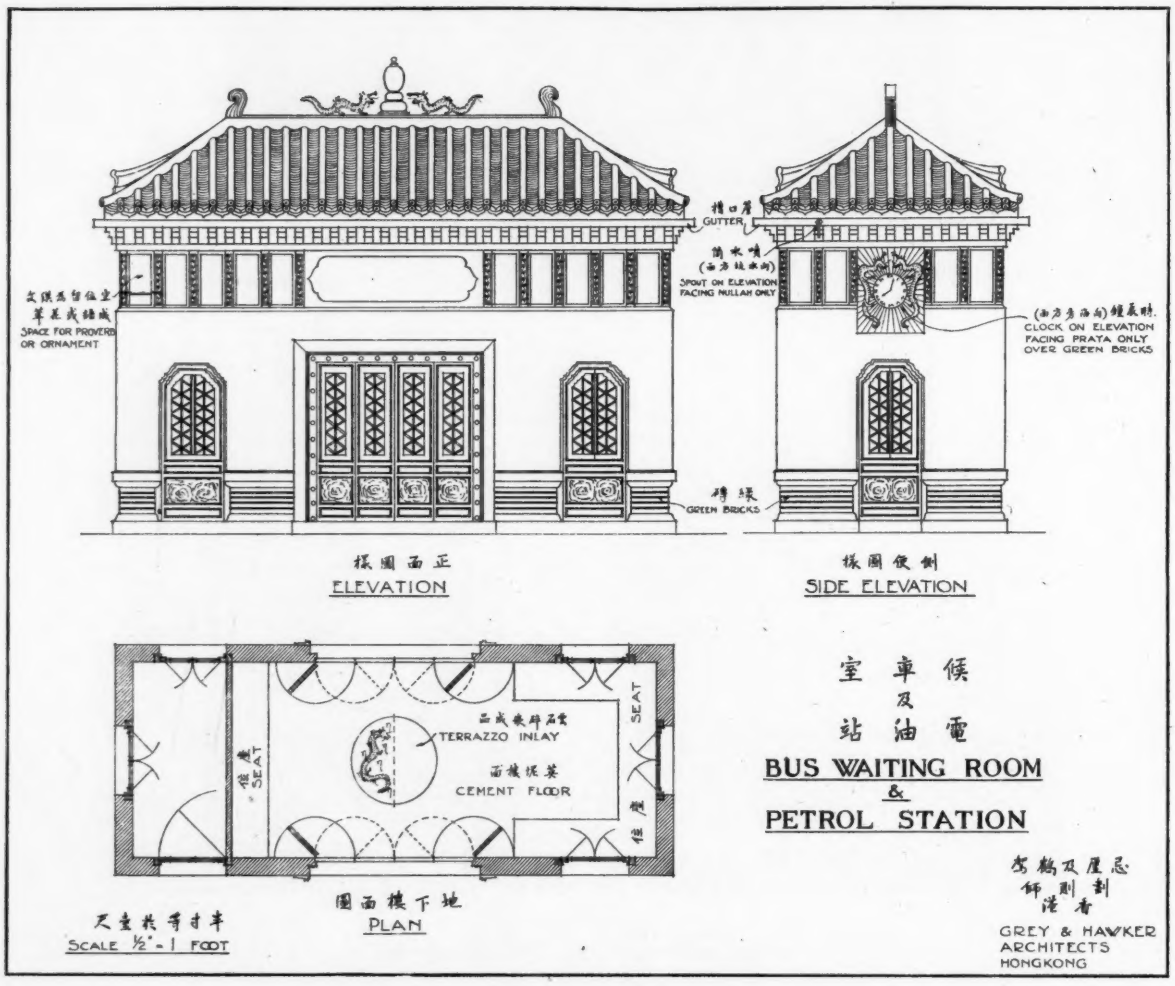
BALCONY PLAN.



GROUND-FLOOR PLAN.

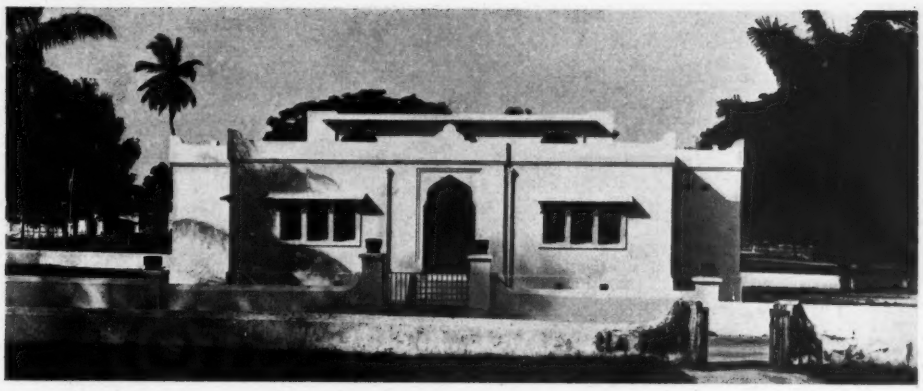
THE "HERMITAGE" CINEMA, HITCHIN, HERTS.

MR. EDGAR SIMMONS, F.S.I., Architect.

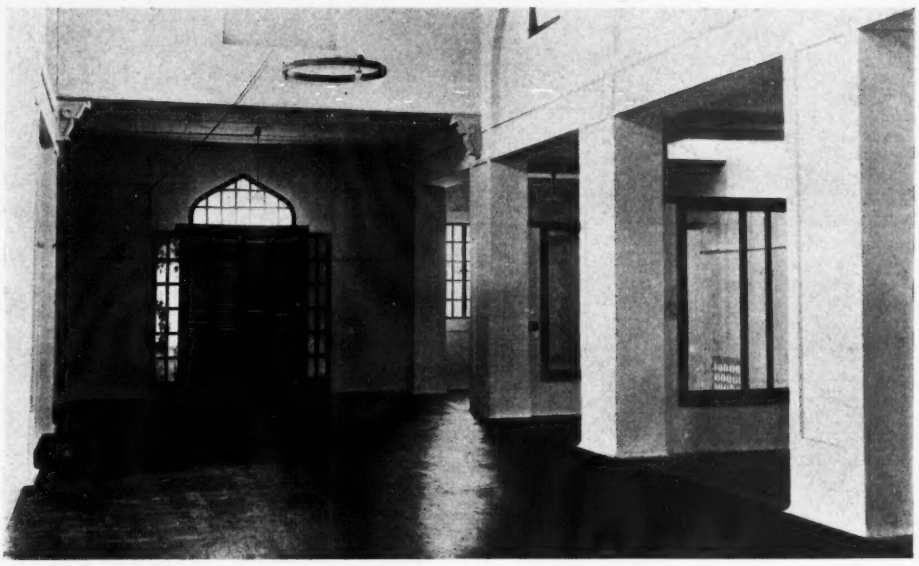


BUS WAITING ROOM AND PETROL STATION, HONG KONG.

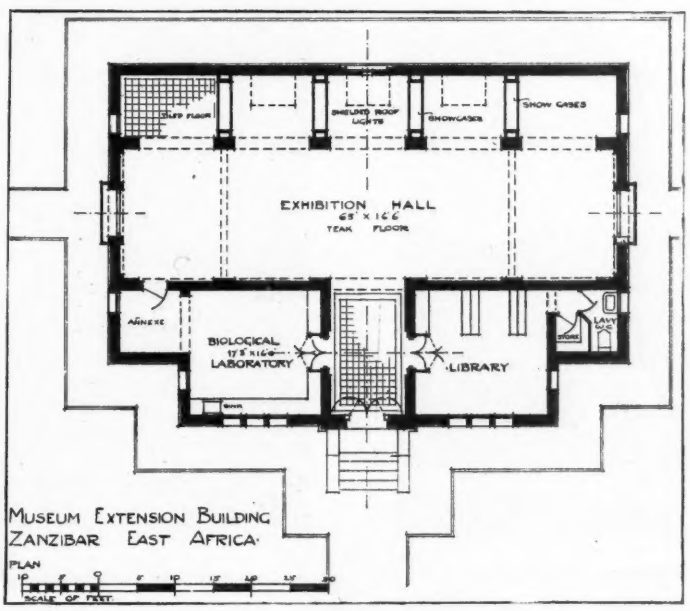
MESSRS. GEO. W. GREY, F.R.I.B.A., F.S.I., and J. BENTLEY HAWKER, Architects.



ENTRANCE FRONT.



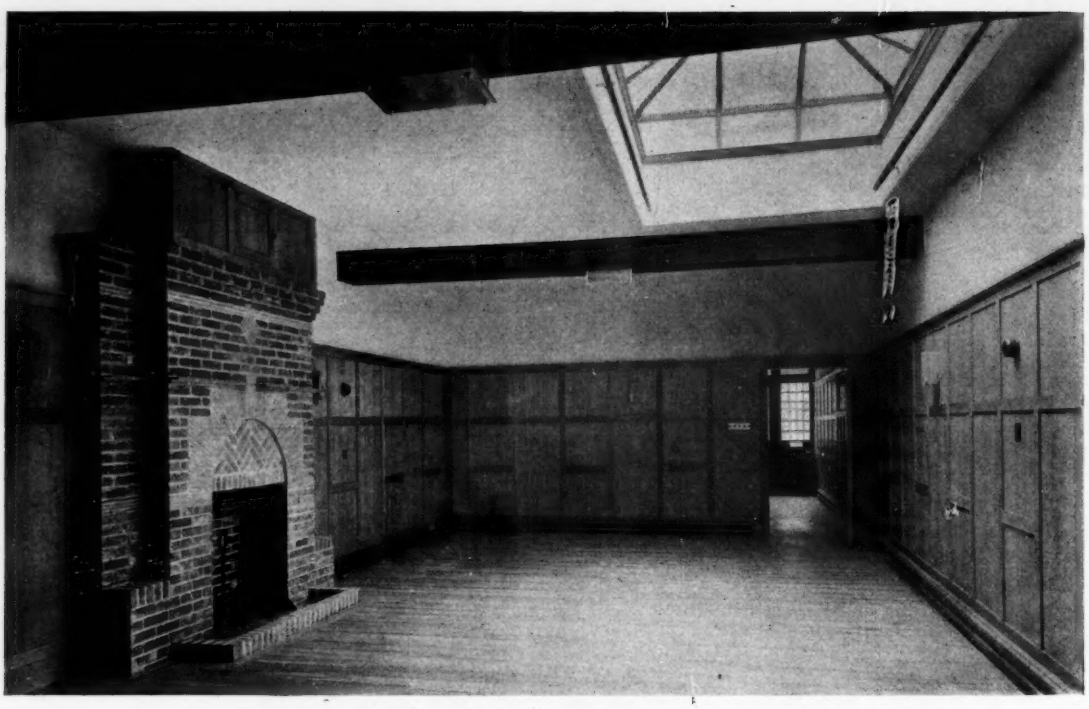
EXHIBITION HALL.



PLAN.

MUSEUM EXTENSION, ZANZIBAR, EAST AFRICA.

MR. P. C. HARRIS, F.R.I.B.A., Government Architect.



LOUNGE, AFTER CONVERSION.

BEFORE CONVERSION.

AFTER CONVERSION.

CONVERSION OF STABLES, ETC., INTO HOUSES, 5, WAVERTON STREET, HILL STREET, W.

MR. P. L. DICKINSON, Architect.

"THE BUILDER" DEBATE

LXXII.—THE LIMITATION OF INVITATIONS TO TENDER.

SIR,—"Positive" produces an interesting argument in support of an indefensible suggestion. I oppose it (a) because it is impossible to carry out, and (b) because I consider it against the public interests. I assume that "Positive" is in normal practice, and that he is in no better position to dictate to his clients than most of us. Does he really think it likely that a client who follows the trading conditions of his neighbourhood will consent to exclude from tendering all firms whose only crime is that they have not joined a trade organisation in their own interests? Possibly there are a good many who take insufficient interest to intervene, and these would provide some material for the ramp. But what is to happen if the client insists that a non-federation firm shall be invited? Will "Positive" refuse to carry out his client's instructions? Or rather has "Positive" the right to refuse to carry out his instructions?

I will assume that "Positive" cannot afford to say "I must retire from this £30,000 contract, because I cannot carry out your instructions." If he is prepared to take this drastic action, he is one of a minority of architects, and his attitude must not be used as an argument in a general case. If this new rule can be broken so easily, surely it is no rule at all, and quite valueless in arriving at the objects at which he professes to aim.

But suppose architects were given some heaven-sent powers to dictate procedure to their clients. Is it in the public interests to put the building market in the hands of a ring? For that is what the suggestion amounts to. It is proposed to bring architects and builders round a table at frequent intervals, and get them to agree to deal only with each other's wares. This would have not even the grace of a personal bargain, because the architect is in effect bargaining with his clients' money and not his own. Each side says to the other, "Make the public deal only with us." I do not see how that can possibly serve the public, nor do I believe it would even serve the architects and builders concerned.

With all the pressure in the world, there are bound to remain many unfederated building concerns, and I should say that the public would flock to the "non-combine" people, and would deal with them through unattached architects if R.I.B.A. architects rendered themselves unavailable. This seems to me the sum and substance of the procedure "Positive" advocates, and I feel convinced that it would be a bad day for the qualified architect if he were to allow himself to be engineered into a position such as this.

F.R.I.B.A.

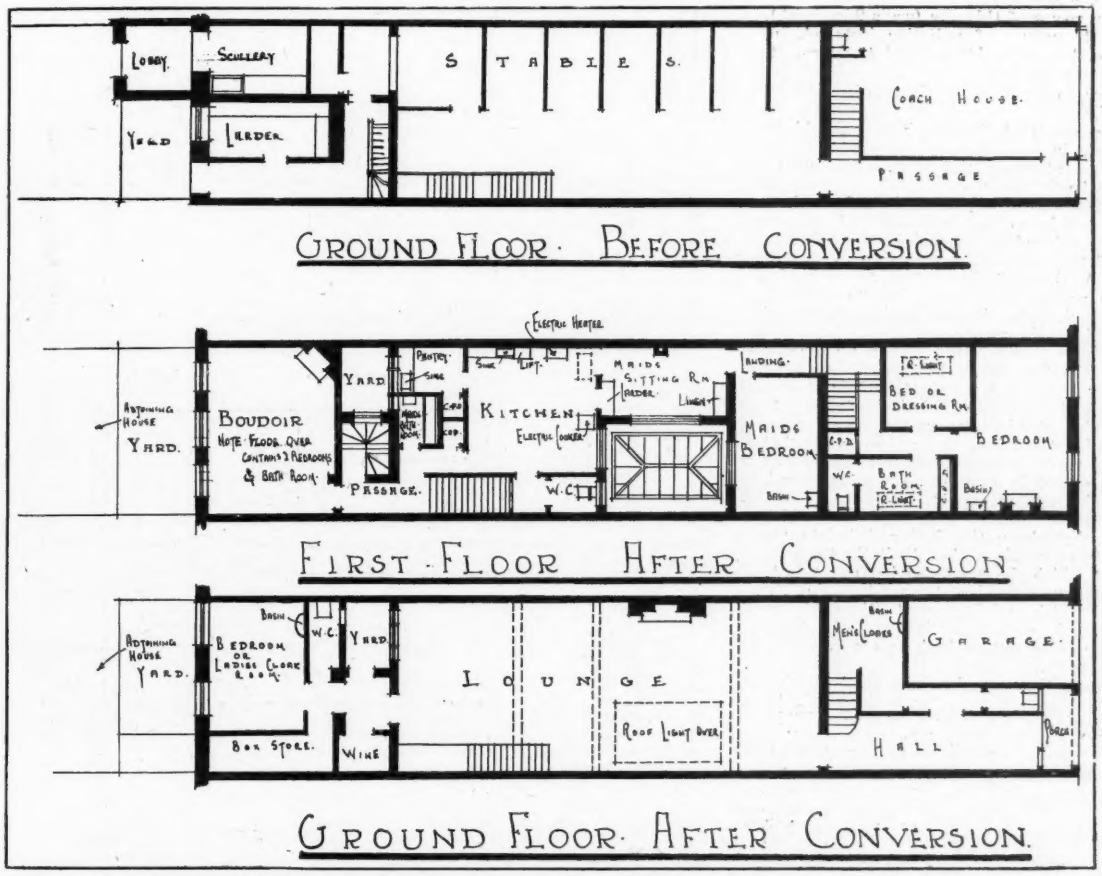
REINFORCED CONCRETE ARCH DESIGN

THIS book* will prove very useful to all concerned in concrete arch design, and particularly to students. There are many well-known text-books on theory of structures which contain the general theory of arches but omit to show how the formulæ obtained may be utilised for the purposes of computation, but unless a tame mathematician is available to adapt the formulæ to meet any given case, and to use the same, the computer is left stranded. In practice a definite solution is and must be obtained. The possession of a tame mathematician is not, however, always a complete solution of the difficulties, for apart from his knowledge of mathematics he has usually little or no practical knowledge to check his results automatically, so that the most absurd results escape detection when they emerge.

The author, in his first two chapters, states the formulæ used as given in text-books of Morley and others, explaining the assumptions made in obtaining the formulæ needed, which are given on page 8, and numbered (8), (9), and (10). Each of these must be integrated, and this is *the* difficulty. To do this directly is not usually easy, so that some artifice for reducing the difficulties of this integration is generally sought. In any particular office the method developed by the computers depends in great measure upon the type of arch favoured. In such structures as the Sydney arch, probably the scheme described very fully by Mr. Ralph Freeman in his papers in the Transactions of the Civil Engineers would meet the case as well as any. Our readers will find this scheme very fully explained in Andrews's additional problems in structures, and it is well worth the attention of designers of two-hinged metal arches. But for reinforced arches this scheme is obviously not applicable directly, and it is this type of arch that the book before us discusses very fully.

The author evidently has developed his method of computation along lines of his own experience; in fact, he states in his preface that the method was outlined in 1913, and the details filled in as opportunity offered during his actual work of design and construction. This method of development frequently leads to a certain amount of specialisation to meet the difficulties peculiar to a particular type of structure, as well as to suit the personnel in the designer's room. But making every allowance for such limitations, we think that the author's claim that his methods as illustrated are of universal application is more or less justified, and we commend this book as fully worth the careful study of all designers, particularly those whose work is the preparation of designs in which the span and loading differ only within small limits.

* "Reinforced Concrete Arch Design." A text-book for Engineers and Advanced Students. By G. P. Manning, A.M.Inst.C.E. London: Sir Isaac Pitman & Sons, Ltd. Price 12s. 6d. net.



CONVERSION OF STABLES, ETC., INTO A HOUSE, 5, WAVERTON STREET, HILL STREET, W.

MR. P. L. DICKINSON, Architect.

(See page 580.)

CENTRAL HEATING AT THE ROYAL MILITARY COLLEGE, SANDHURST

By LIEUT.-COL. H. M. FORDHAM, M.C., R.E., A.M.I.E.E., and LIEUT. (I.R.E.M.) H. E. WILLIAMS, R.E.

LOW-PRESSURE hot-water central-heating plants are to-day in such common use that the following details of an installation practically entirely automatic in operation, which is proving extremely economical in fuel for the results produced, may be of general interest.

The museum and library at the Royal Military College, Sandhurst, is a detached building, approximately 100 ft. long, 80 ft. wide and 34 ft. high, comprising one main hall, three subsidiary rooms and a cloak-room, all of which require heating for 12 hours a day. Until recently the rooms were warmed by a number of slow-combustion coke stoves, which were unsightly, productive of dust, and not very efficient. An automatic and efficient system of central heating, requiring practically no attention, was installed.

The system is arranged as shown in Fig. 1. Two flow and return circuits are employed. Heating is effected by column radiators and also by permitting hot air to rise through floor grids. These grids are placed directly over the 4 in. flow and return pipes, which are run below the floor and are unlagged. In this way the radiation surface of the pipes can be utilised without employing the somewhat unsightly method of running bare pipes round the skirting.

The total capacity of rooms to be heated was 220,000 cubic feet. Temperature to be maintained is 60 deg. Fahr. for approximately 12 hours when the rooms are in occupation, and 50 deg. Fahr. at night when the rooms are empty.

B.T.U.s lost per hour (temperature inside 60 deg. Fahr., outside 30 deg. Fahr.) 468,000, allowing only one change of air per hour in rooms of this size (walls 9 in. brick).

Sq. ft. surface of radiation installed, including flow pipe, 3,000, equal to 14 sq. ft. per 1,000 cubic feet.

Boiler capacity as installed, 616,000 B.T.U.s.

To ensure that the installation should be economic in operation and require only the minimum attention the following essentials had to be fulfilled :—

(1) Some form of automatic stoker which would enable small, cheap coal, such as peas and screenings, to be fired in the boiler in lieu of the more expensive coke.

(2) A thermostatic control to maintain, within narrow limits, any definite temperature required in the rooms, irrespective of external conditions.

(3) Some time-operated device that would ensure the fire always being kept alight by running the stoker for short periods at predetermined intervals. This is most likely to be needed at night, when the rooms, after twelve hours heating, may cool so slowly that the thermostatic control in the museum may never, except in very severe weather, reach the night temperature set.

(4) Some form of master control which would shut down the feed and isolate the other two controls, and so limit the temperature at which the plant can be run; this to prevent an excessive temperature in the rooms which might result through the thermostatic control getting out of adjustment or being set too high by the occupants of the room.

To meet these requirements an Ashwell & Nesbit "Iron Fireman" was installed, together with a Hartley & Sugden "White Rose" boiler No. 509. The "Fireman" is actuated by a ¼ b.h.p. motor which feeds small coal from the hopper by means of a worm conveyor to the furnace and also operates a forced draught fan all the time the feed is in action. This latter enables any fall in temperature to be counteracted quickly. The gear connecting the motor to the worm has three speeds. By trial the speed best suited to average temperature conditions, and the fuel used, can be found, and when once set need not be changed, unless a marked difference in outside temperature occurs. The hopper of this type of stoker is capable of holding 800 lb. of coal, and will, when full, run for two days an installation of this size.

The motor is controlled by a thermostat in the museum with a range of 30 deg. Fahr. This control has been set to operate during the day, *i.e.*, from 7.30 a.m. to 7.30 p.m. at 50 deg. Fahr., and during the night at 50 deg. Fahr. When the temperature of the rooms rises more than one degree above the set point the thermostat stops the motor, and restarts at a degree below. This control is sensitive in operation, and the room's temperature has never exceeded 63 deg. Fahr. to date, or in the daytime fallen below 59 deg. Fahr.

In the motor circuit is incorporated a time interval contactor, consisting of a Venner time-switch, which comes into operation once an hour whenever the stoker is stopped. It has been found in this case that a feeding period of ten minutes per hour on low gear to five minutes per hour on top gear is sufficient to keep the fire alight. In practice, the time feed normally only operates during the night, when the rooms' thermostat is set to 50 deg. Fahr. The heat losses from the buildings have not been sufficient to reduce the rooms' temperature 10 deg. over twelve hours during the present winter up to the time of writing.

A master thermostat is installed in contact with the water in the boiler, and is adjustable between 80 deg. Fahr. and 220 deg. Fahr. Should the boiler temperature exceed the pre-determined limit, in this case 170 deg. Fahr., the master thermostat stops the stoker motor, if working, and isolates the other two controls until the temperature is reduced.

The temperature chart, Fig. 2, shows the readings obtained during one week's working.

A fuel consumption test, taken over eighteen days, November 14 to December 1, gave the following results :—

Total coal burnt, 6,718 lb., average 373 lb. per day.

Average external temperature, 41.9 deg. Fahr., highest 60 deg. Fahr., lowest 32 deg. Fahr.

Average internal temperature : by day, 61 deg. Fahr.; by night, 56 deg. Fahr. (lowest 52 deg. Fahr.).

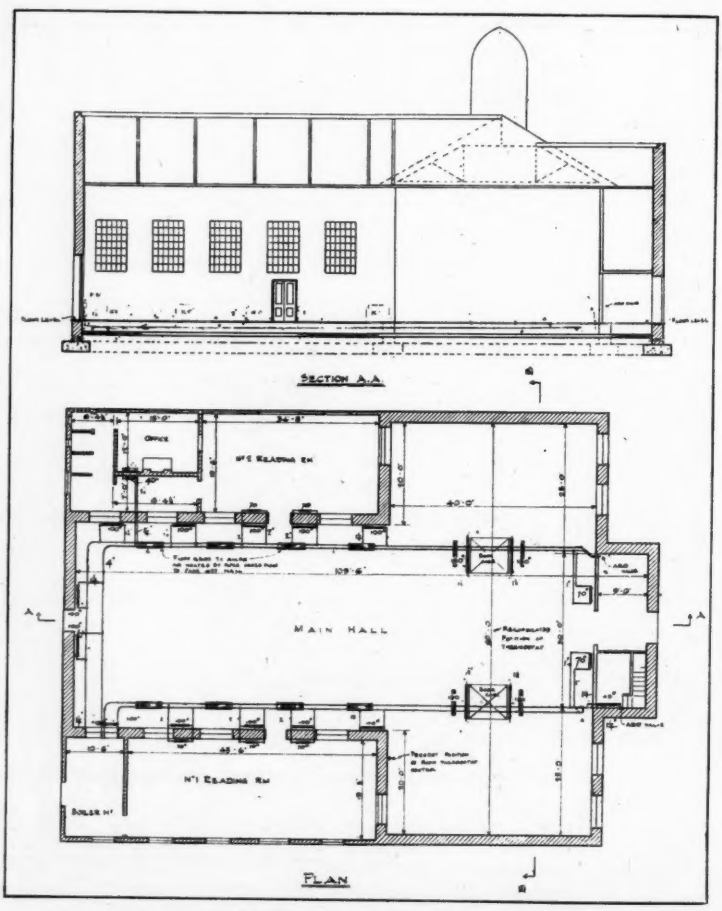
Coal per day, average over one week of mild weather, 362 lb. The coal required over a full winter period, 40 tons. Cost per ton, 18s. 6d. (small coal).

Estimated cost of fuel	£37
Estimated cost of elec. current for stoker	£2
Total ...	£39

During the previous winter the slow-combustion stoves used 45 tons of coke at 27s. 6d. a ton, costing £62, thus a reduction of £23 on fuel bill per year is effected.

To the credit side must also be added :—A saving of time, of at least three hours per day, spent by an attendant in firing the stoves and cleaning up the dust; the consequent better condition of the museum exhibits; and the fact that the rooms are more effectively warmed; the boiler is only attended for half an hour a day to remove clinker and fill the hopper.

Other points of interest are :—A "Drayton" tank eliminator has been used on this system. The boiler is fed direct from the water main, the pressure in which averages 80 lb. per sq. in. The eliminator maintains a head in the system of approximately 30 ft.,



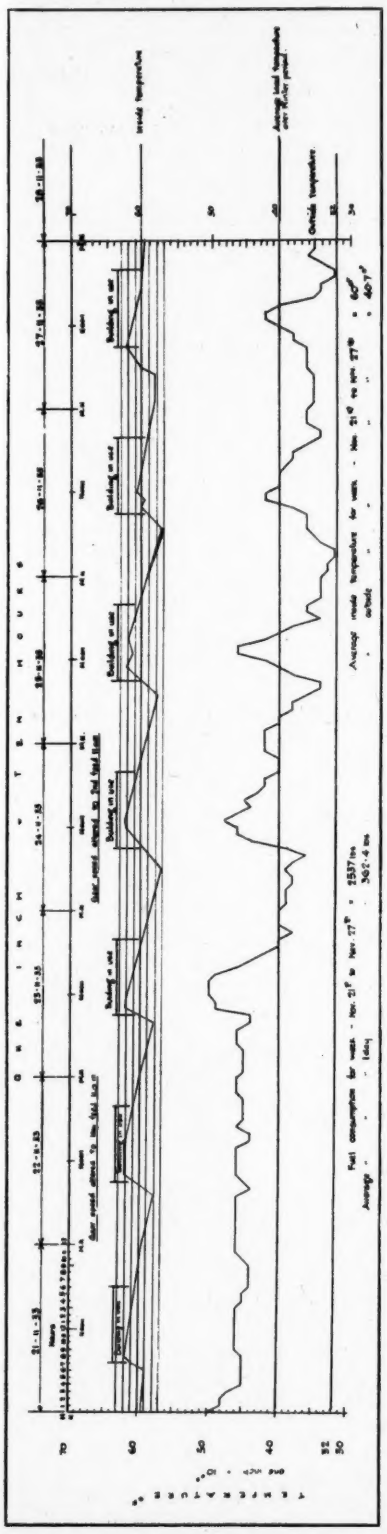
ROYAL MILITARY COLLEGE MUSEUM, SANDHURST : Central Heating System. (Fig. 1).

and in this case was considerably cheaper than the provision of a tank.

Air is automatically evacuated from each of the two flow and return circuits by an automatic thermostat-cum-float valve at the highest point of each flow and return circuit.

The boiler is lagged by two very thin sheets of aluminium foil, covered with the usual galvanised casing.

The total cost of the installation was £563, or £2.65 per 1,000 cubic feet heated.



CENTRAL HEATING SYSTEM CHART, ROYAL MILITARY COLLEGE MUSEUM, (Fig. 2).

NEW METAL FINISHES

A PAPER on "Metal Finishes Used in Modern Architecture" was delivered by Dr. S. Wernick, M.Sc., Ph.D., at the Building Centre, W.1, on March 22.

There was no gainsaying, commenced the lecturer, that the questions of design and choice of material to suit a given piece of work were naturally of the highest importance. It was not, however, sufficiently realised how much not only the beauty but the durability and general efficiency of a structure might depend upon the finish which that structure received. Most architects and builders took a keen interest in new finishes as they appeared, since it was generally appreciated that that helped very materially to sound that modern note which seemed to be so essential to-day, due to the existence of an enlightened and discriminating public. Up to very recent times, metal finishing had remained largely an art, and a very undisciplined art at that. Within the last fifteen years or so the advent of scientific methods had rationalised—almost revolutionised—metal finishing, so that most of the processes were now rigidly controlled and the laboratory worked in close co-operation with the shop throughout all the stages in the process.

It would be helpful if the term "metal finishing" were defined. Metal finishing was confined to the treatment of metal surfaces, the object being to effect a change, usually, but not necessarily, by means of a superficial covering, in the appearance of the surface. The change might be accompanied by an alteration in the surface properties which might affect beneficially or adversely its general serviceability. It might be emphasised that the change might not necessarily be a beneficial one.

The lecturer then proceeded to trace the development of the application of surfaces to metals from the earliest known times, touching especially on the art of the Egyptians and of the alchemists who flourished in the Middle Ages. Modern methods of metal finishing, he continued, had been developed over not much more than the past century. Thus the art of bronzing was developed in France just prior to 1828, by which year only one colour of bronze was known to the trade; that was known as Verde Antique, different shades of which were obtained according to the customers' tastes. Florentine bronze appeared in that year and was quickly followed by other methods of bronzing, some of them even to-day being recognised as the finest finishes in the art, produced only upon the most expensive bronzes. The rise of electro-plating could be said to have commenced some seventy odd years ago, the first metals to be electro-deposited on a commercial scale being silver, gold, nickel and copper. To-day, in addition, the metals zinc, tin, brass, chromium, cadmium, platinum, palladium, rhodium and an extensive range of alloys were electro-deposited commercially for various purposes.

The Treatment of Ferrous Materials.

The base metals used in architectural work comprised both of the large classes into which metals were broadly divided—*i.e.*, ferrous and non-ferrous materials. The use of the ferrous metals, the basic constituent of which was, of course, iron, actually completely eclipsed the use of the non-ferrous metals in point of quantity, despite the fact that non-ferrous metals comprised all metals, with the exception of iron and its alloys. Iron was by far the most widely used metal, because of its abundance, and hence cheapness, and the excellent structural properties of its alloys, the various steels which were available to-day. It suffered from the great disadvantage that it was readily corroded by the atmosphere, both its appearance and strength steadily deteriorating as a consequence; and it must therefore be protected by one of the many finishing processes which were available. It was not generally appreciated that the havoc wrought by the natural corroding agencies by which we were ever surrounded constituted one of the most serious drains on the resources of the world. Translated into terms of money, according to a conservative computation which had been made, the loss due to the corrosion of iron and steel alone amounted to the huge sum of £700,000,000 annually. The war against corrosion proceeded without halt, since protective measures were universally employed; and the cost of the various rust preventives used was quite considerable, amounting to something like 20 per cent. of the total corrosion loss. The processes employed in preventing corrosion were constantly increasing in number, although, basically, there were two main classes of coating processes—namely, the inorganic coatings, comprising metals and inorganic compounds; and the organic coats, which included paints, enamels, varnishes, and lacquers. Both classes were very extensively used, the organic type of protective being probably more widely employed as a structural finish, while metal finishes were more often used on the smaller articles of utility and decoration. In the first of those classes the number of finishes coming under the second sub-head—compounds—were small compared with the metal finishes available. They included the phosphate type coatings used as basis for enamels, etc.

The lecturer then described in some detail the methods of applying metallic coatings, the principal ones being (1) hot dipping, (2) electro-deposition, (3) vaporisation or cementation, (4) spraying, (5) chemical replacement, and (6) rolling.

The Finishing of Aluminium.

The use of aluminium was extending, and new applications were being found for the metal almost daily. Over thirty times as much aluminium was produced in 1930 as in 1900. The metal had obvious attractions for the architect and builder, in view of the lightness and excellent structural qualities of many of its alloys and its ready working and fabricating properties. Although a number of alloys had been produced which were able to stand up fairly satisfactorily to atmospheric corroding influences, really effective corrosion resistance could only be obtained by the application of an adequate finish. The most successful methods of protecting aluminium and its alloys utilised the principle that it was the existence of the thin oxide layer on the surface which prevented aluminium from being one of the most corrodible metals extant. The anodic processes, as the electrolytic methods are commonly known, utilised a suitable electrolyte, in which the article to be treated constituted the anode of the circuit. As a result, a coating of aluminium oxide formed, which possessed remarkable properties. Not only did it impart very considerable corrosion resistance to the article treated, but under certain conditions extremely hard coats were produced which were highly abrasion resisting and, therefore, increased the wear resistance of the article to a very appreciable degree. The oxide film, which had mordanting properties could also be coloured by the use of suitable dyes and highly pleasing decorative effects might be achieved by these means. The oxide coat, which was integral with the base metal and did not therefore strip or peel if correctly applied, was also incidentally electrically insulating. Anodising would in the future, concluded the lecturer, be one of the most useful adjuncts to the architect and builder who wished to make use of aluminium, and neither should be discouraged by a mass of poor work which had appeared on the market during the last two or three years, which was not really representative of what could be turned out when the process was carried out on scientific lines.

The Norbreck Hydro.

The official opening of the new wing at Norbreck Hydro took place on March 24. The Mayor of Blackpool and Miss Frances Day performed the ceremony. This extension gives to Lancashire what is said to be the largest hydro in Europe, housing 1,000 guests and containing a large convention hall, a "tropical sun" solarium, ballroom, and extended covered bathing pool.

SOCIETIES AND INSTITUTIONS

EDINBURGH ARCHITECTURAL ASSOCIATION.

A Valedictory Address.

MR. JAMES A. ARNOTT, F.R.I.B.A., as retiring President of this Association, gave a valedictory address on March 21.

Dealing with the depression in the architectural profession, the speaker said that the situation would be eased considerably if there could be some scheme of distribution or co-operation in respect of building schemes sponsored by local authorities. They heard about movements to help what were termed the unemployed. It seemed to be lost sight of that the term "unemployed" was wide in range. They had the cases also when local authorities entrusted architectural work to an official not a trained architect, and who must, therefore, depend upon assistants who might or might not be qualified to carry out architectural work. They also had the cases where public and private institutions—other than county and municipal—entrusted work of an architectural character to an official in their employment who was not a trained architect. This mode of conducting business was not fair to the community nor to the benefactors and subscribers to the funds of those institutions, and such a policy did not make for efficiency. In course of time the Architects (Registration) Act would put this right, and then it would no longer be possible for the work to be handed out to him "whose name was not on the register." There was another reform which would materially assist the members of their profession—not to speak of its being a general advantage to the whole community both from the practical and the æsthetic points of view—the insistence that all plans coming before the local authority for building warrants must be prepared by a properly qualified architect whose name was on the register.

At the present time amenity and utility were regarded as one. Science and industry were responsible, but might science and industry not bring about the union again? Speaking of the riot of chimney stalks which infested suburbs like a fungus, he asked: Had those who built these eyesores, who designed them, and those who occupied them, lost "eye-sensitiveness"? But it was not only "slated hideousness" and the horrible complexus of chimneys that they had to complain about. In certain districts in the country there existed the advantage of colour—the tile and the brick—and, carefully selected, those could present a very beautiful combination. But surely something better might be done even where one did not possess locally the materials so much admired in other districts. Red-coloured ridge tiles capping a roof of slate! Red stone dressings in juxtaposition with rubble of totally inappropriate shade, and this mode of finish probably introduced only on the frontage facing a thoroughfare, and intended to give the building a hall mark of superiority? The remaining façades, supposed to be of lesser importance, but in reality often much more in evidence, in this case, often finished with harling drab and dreary, and when this principle was extended to the ends of the chimneys nearest the public thoroughfare, the absurdity reached the limit. This was a mode of finish recalling to mind the use of the starched "dickey" over, say, a flannel shirt. When was this wretched practice to disappear? Would it be an exaggeration if the Scottish capital were described as a city possessing some of the most uninteresting and inartistic suburbs in the whole country? They used to hear the cry, Why cannot architects invent a new style? Well, in certain quarters this was being done with a vengeance. New styles, however, did not grow up in the night, and there was often a good deal of the trial-and-error method—with a substantial proportion of the latter.

There was one point which he wished to mention in this endeavour to bring in something new—new to our country—this island of ours. Was it not possible to give a "colouring" of their own? They claimed Scotland as a nation, and asked for the establishment of Governmental quarters. Scottish architecture had always had a distinctive character. Could they not retain a distinctive quality? He did not mean the term in a narrow sense. He meant that something—something very subtle—which one saw through all Scottish architecture, that something which said, "Here is the soul of Scotland."

SOUTH WALES INSTITUTE OF ARCHITECTS: CENTRAL (CARDIFF) BRANCH.

Annual General Meeting.

The annual general meeting of this Institute was held at Cardiff on March 14. The hon. treasurer's report and balance-sheet, showing the healthy financial condition of the branch, was read and confirmed. The hon. secretary's report, which was also read and confirmed, showed that a useful year's work had been carried through, and that the lectures, exhibitions, visits, and tea discussions had been well attended and appreciated by the members. The report also showed that the School of Architecture Club is in a healthy condition, doing valuable work for the younger member. Reference was also made to the fact that the Branch welcomes the formation of the new Cardiff Civic Society of which it has become a "life member." The chairman reported that he had attended the meetings of the Allied Societies' Conference at the R.I.B.A., and explained in outline the main points discussed at those meetings.

The following officers and members of the executive committee were elected for the coming session :—

Chairman : Mr. J. Williamson, A.R.I.B.A.

Hon. Treasurer : Mr. H. Teather, F.R.I.B.A.

Hon. Secretary : Mr. W. S. Purchon, M.A., A.R.I.B.A.

Executive Committee : Messrs. H. Norman Edwards, Gordon Griffiths, L.R.I.B.A., A.M.T.P.I., Ivor Jones, A.R.I.B.A., T. Alwyn Lloyd, F.R.I.B.A., Percy Thomas, F.R.I.B.A. Representatives of Associates and Students : Messrs. F. G. Allen, A.R.I.B.A., and Trevor Hill.

The following were elected as Members of the Council for the South Wales Institute of Architects :—Messrs. Percy Thomas, F.R.I.B.A., H. Norman Edwards, T. Alwyn Lloyd, F.R.I.B.A., Gordon Griffiths, L.R.I.B.A., A.M.T.P.I., T. Edgar Smith, A. J. Hayes, H. W. Fletcher, C. F. Jones, A.R.I.B.A., J. Williamson, A.R.I.B.A., A. J. Hallam, M.T.P.I., W. S. Purchon, M.A., A.R.I.B.A. Representatives of Associates and Students : Messrs. F. G. Allen, A.R.I.B.A., and Trevor Hill.

REINFORCED CONCRETE ASSOCIATION.

Reinforced Concrete in Modern Buildings.

On Thursday, March 15, a lecture was given by Mr. T. C. Durley, B.A., A.M.Inst. C.E., on behalf of the Reinforced Concrete Association to the Doric Architectural Club, Oxford. The subject of the address was "The Use of Reinforced Concrete in Modern Buildings," and the lecturer said that the properties of the material, by allowing almost any variation of shape or size, afforded the architectural designer an enormously greater scope than he was ever permitted before. The various special constructional forms and the numerous methods of decorative textural treatment were discussed, and the employment of these in modern buildings was illustrated by a series of lantern slides. The lecturer traced the gradual supersession of the traditional types and the evolution of a new style resulting from the deliberate exploitation of the distinguishing properties of reinforced concrete. In conclusion, he emphasised the necessity for close collaboration between the architect and the engineer, particularly in the early stages of design, in order to employ the material to its greatest advantage. An interesting discussion followed.

HANTS AND ISLE OF WIGHT A.A.

The Hampshire and I.O.W. Architectural Association visited, by invitation of the proprietors, the new "Regal" cinema, Winchester. Over 800 persons were present and were shown over the building by Mr. Robert Cromie, F.R.I.B.A., the architect, who afterwards gave a short lecture on the design of the modern playhouse. The company were then entertained by an hour's special programme on the screen, which included a film on "The Manufacture of Glass," prepared for Messrs. Pilkington Bros. The arrangements were made by Mr. A. L. Roberts, F.R.I.B.A. (hon. sec.), and Lt.-Col. R. F. Gutteridge, T.D., F.R.I.B.A. (President), acted as chairman.

INSTITUTION OF STRUCTURAL ENGINEERS.

Membership.

The following elections to this Institution have been made :—

MEMBERS.

*G. P. Bridges, Cheadle.
*H. W. Coultas, Birmingham.
†W. E. Francis, Bristol.
‡W. H. Saxton, Harrow.
*H. W. Tee, Woolwich.

ASSOCIATE-MEMBERS.

§H. H. Apcar, London.
E. Bateson, Thornton Heath, Surrey.
A. E. Briggs, Eccles, Manchester.
A. M. Kapadia, London and India.
§H. G. Keefe, Herne Hill, London.
L. Parker, Derby.
§J. M. Richards, London.
M. A. K. Tarin, Katihar, Bihar.

GRADUATES.

‖W. Bates, Patricroft, Manchester.
N. Cowan, Blackheath, London.
R. G. Cox, Lower Clent, Stourbridge.
K. T. H. Langton, Hull.

STUDENTS.

E. T. Armson, Tamworth, Staffs.
C. J. Kimber, Kingston-upon-Thames.
J. Russell, Birkenhead.

* Transfer from Associate-Membership.
† Transfer from Associateship.
‡ Reinstatement.
§ Transfer from Graduateship.
‖ Transfer from Studentship.

ROYAL INSTITUTE OF PAINTERS IN WATER COLOURS

The 125th exhibition of this Institute is now open at 195, Piccadilly, where over 500 works are on view, amongst which are many attractive pictures, and the varied subjects should appeal to a large public. Among so large a number of exhibits reference can only be made to a few. No. 18, "The Gateway, Chepstow," by Mr. H. Tittensor, is a broadly handled subject in strong light, and a pleasing touch of colour is added by the scarlet shopfront under the archway. Mr. C. E. Brock's exhibit, No. 61, entitled "Two to One," is a typical Victorian room, accurate in every detail. No. 111, "The Fountain, Kaysersberg, Alsace," by Mr. E. Guy Dawber, is a direct and fresh little picture, truthful in colour and suggestive of having been made on the spot. In No. 149, "China Market, Ludlow," by Mrs. Freda Marston, the figures and the old buildings are well shown, the latter unusually so. No. 151, by Mr. Gordon M. Forsyth—"Interior, Auxerre Cathedral"—is a fine impressive drawing, conveying the atmosphere and sanctity of the building. No. 253, "The Market Place, Old San Remo," by Mr. Leonard Squirrell, is a fine subject, with its picturesque old buildings in strong sunlight and shadow; its market stalls and figures in bright colours in the foreground make an attractive picture. No. 419, "Morning Grey, Holland," by the late Frank Spenlove, and No. 475, "The Great Mill," by J. Littlejohns, are interesting compositions. Five works by the late President, Sir David Murray, are on exhibition, and they are typical examples of the work of this fine old painter. Mr. Terrick Williams, the new President, also shows some charming examples of his work. Mr. H. David Richter shows a number of his decoratively treated flower pictures, and among the exhibits of Mr. Martin Hardie, V.P.R.I., the picturesquely grouped village of Brockweir, near Tintern, commands attention.

LIGHTING IN INTERIOR DECORATION

Architects' Lighting Conference.

THE fifth of the current series of conferences for architects was held at the Lighting Service Bureau, Savoy-hill, W.C.2, on March 14, when Mr. R. O. Sutherland, A.R.I.B.A., lectured on "Lighting in Interior Decoration."

When speaking of lighting and architectural lighting it would, said the lecturer, be a fair question to ask: what is the difference? For an answer it would be best briefly to analyse the definition. Importance was attached to the value of "system" and the significance of that inclusion meant that architectural lighting was no disordered array of haphazard lamps, but that all the component lighting factors were co-related and placed in ordered design to provide illumination efficiency and architectural satisfaction. Elimination of superfluity was essential, and every feature should be brought into play to achieve a predetermined objective. That objective was reached as a result of the utilisation by light of surfaces, either luminous or illuminated. Surface might well be described as the intermediary between light and architecture, for it represented the common ground on which both architect and engineer met. Both had much the same interests—the desire to preserve simplicity, and to utilise colour and texture so that they contributed a valuable share to the significance of a design, whether it were interior decoration or any other sphere of planning. Architectural lighting should be visualised and preconceived at the conception of a design; and the ability to do that depended upon the "artificial light-mindedness" of an architect or decorator.

In architectural lighting the impression of a space being in a state of light was aimed at, rather than the condition of a room being lighted—a distinction with the difference that "integral" illumination was part and parcel of the environment, while the "introduced" luminant was a stranger to the setting and for that reason was conspicuous generally by its discomfiture. The three major aspects were the physiological, psychological, and economic. The physiological value included the study of (*a*) size of object; (*b*) contrast with setting; (*c*) acuity of vision; (*d*) brightness of object. Those matters concerned luminous efficiency. Economics was a very controversial matter. It would suffice to say that anything worth having was worth paying for, provided always that "effectiveness" was obtained at minimum cost, a desirability which, after all, was only a canon of all good design, irrespective of its particular interest. There remained the psychological influence, and that covered architectural aspects, the relation being in respect of the exercising of such powers as æsthetic sense, inspiration, and intuition, with special reference to the use of light in buildings.

In the discussion which followed, Mr. G. Grey Wornum, F.R.I.B.A. (a member of the Joint Lighting Committee of the Architectural Profession and the E.L.M.A. Lighting Service Bureau, which has sponsored the conference), said that those attending were entertained with demonstrations which made one realise that no step should be taken by the architect in the matter of illumination designs without reference to full-size models and to such premises as the Lighting Service Bureau for the working of such models. The speaker stressed the importance of light sources being accessible, in order that lamps could be cleaned or replaced. He went on to say that it would be realised from the lecture that we were entering upon almost a new field of design in this architecture of decoration and lighting; and although through excess of zeal, or perhaps as the result of over-persuasion by some of the illuminating engineers, architects might go a little too far, they were at any rate displaying zeal for this new kind of decoration, and, no doubt, engineers would help them to achieve the desired results by simpler and more economical means than were yet at their disposal.

BOOK REVIEWS

The Architects' Compendium and Annual Catalogue for the Building Trades, 1933. Edited by JOHN ED. SEARS, J.P., F.R.I.B.A. London: Compendium Publishing Co. Price £2 2s.

No more difficult task confronts the reviewer than the noticing of this excellent book, for what shall he write about it that is not, he imagines, already known to every architect and constructor of importance in the kingdom? There are, however, younger men on every side of the building trade who may yet be unacquainted with the merits of the Compendium, and for the benefit of these an indication of the contents may be of service. Seven hundred pages are given to a sectionised catalogue of the announcements of specialists in every branch of the trade. This, besides being an invaluable feature for reference, is of considerable interest architecturally, since almost every recent building of note is somewhere illustrated within its pages. Other features include a schedule of prices for building materials and articles; another for building work; and a list of wage rates for the larger towns in England and Wales and Scotland. A 17-page supplement of technical information and constructional data is included, as are also some surveying notes. Of considerable use, also, is a summary of the main provisions of the London Building Act, 1930, as are also short sections devoted to: List of London District Surveyors; District Surveyors' Fees; The Model By-laws of the Ministry of Health; and New Statutes, Measures, Rules and Orders and Legal Decisions in 1932. Finally is given a register of architects and builders in London and the provinces, Scotland, Wales and Ireland, sectionised under county and town. It is clear that in this, the 47th year of issue, the Architects' Compendium has only consolidated its position of use in the building industry.

A Manual of the Timbers of the World: Their Characteristics and Uses. By ALEXANDER L. HOWARD. Revised Edition. London: Macmillan & Co., Ltd. Price 36s. net.

The first edition of this work was published in 1920. The appearance of a revised edition is welcome because of the greatly increased use of Indian and other timbers, and the need for a record of experience with them. The purpose of the work is described by the author as being to "give information regarding those timbers which have been, or are expected to be, used in works of art or utility," and the purpose is admirably served. The general plan of the book is to give the common names of the timbers in alphabetical headings, with alternative vernaculars as well as botanical terms, where possible; the country of origin; weight; physical characteristics; and uses. The book is especially valuable for the fact that it is no mere compilation of accumulated knowledge, but is in large measure the result of the author's own personal experience of timbers for the best part of a lifetime, though, rightly, he does not hesitate to draw upon the knowledge and experience of other accepted authorities. The book, which contains upwards of 100 illustrations, should be found of value and interest as a work of reference, not only by timber merchants, but by architects, builders, engineers, students, and, indeed, all concerned with wood production and utilisation.

In his introduction the author draws attention to the unsatisfactory state of afforestation in this country. Our national supply of timber has been of immense value to us in the past, but to-day, as he points out, "whole areas have been denuded of trees which might have continued to give a supply of home-grown timber, while, as with other commodities, we have relied of late years to a needless extent upon foreign supplies." He urges that the denuded areas should be replanted and fresh trees introduced. Here, surely, is an opportunity to absorb a considerable number of our unemployed and at the same time to add to our national wealth and material resources.

A History of the Manor and Parish of Iver. By W. H. WARD, M.A., F.S.A., F.R.I.B.A., and K. S. BLOCK, M.A. London: Martin Secker. Price 10s. 6d. net.

The principal author of this book, Mr. Ward, was the son and grandson of two Vicars of Iver, both of whom earned the affection and respect of all who came into contact with them. The author was an architect by profession, and therefore more than usually fitted to read and interpret the records of the past. The Church of St. Peter is traced back to the time of the Conquest, when it was a modest aisleless building with a thatched roof. In the preface, Mr. A. Tilley has sketched the life and achievements of Mr. Ward down to his death in 1924, at which date this work was left incomplete. The work was then entrusted to Miss Block, who, with the assistance of Miss Ward (the author's sister) and the material left, has completed the work down to the year 1850.

Histories, like biographies, are difficult undertakings, and may easily become tiresome reading. Especially is this the case when material is abundant, with the consequent difficulty of deciding what to include or reject. The first chapter is specially interesting reading, for it gives an admirable picture of the social conditions of life in this ancient village in Norman times. The succeeding chapters are also devoted to definite periods, associated with the successive lords of the manor. Thus, the second chapter is entitled "Iver under the Claverings"; the third, "The College of St. George, Windsor"; followed by the "Tudor Period," and so on. In each of these chapters much space is devoted to the social and economic conditions of the times, with many interesting quotations illustrating the activities of the people. Penalties for not keeping Sunday properly are very frequent. There is an amusing reference to Henry VIII, who purchased the manorial rights from the Windsor authorities, but omitted to pay for them, and left instructions to his son Edward VI to do so for him, and so appeased his conscience.

This interesting history will, we think, be read with interest, not only because of the information about Iver, but because of the description it gives of the manners and customs of England.

Transactions of the St. Paul's Ecclesiological Society. Vol. X, part 2. Cambridge: W. Heffer & Son. Price 7s. 6d.

This volume contains the transactions of this body and an account of the proceedings and visits made by its members during 1931 and 1932. There is also the continuation of a paper read before the Society in 1893, by Mr. J. N. Comper, the distinguished church architect, entitled "Further Thoughts on the English Church Altar, or practical considerations on the planning of a modern Church." Another paper, by Mr. Arthur R. Green, F.S.A., treats of "Early Sundials." The Rev. M. F. Foxwell, M.A. (Oxon), Senior Canon and Succentor of St. Paul's, contributes an interesting paper on "The Charter of the College of Minor Canons." Some ten meetings of that body are held during the winter at the R.I.B.A., and during the summer months, on Saturday afternoons, visits are paid to churches and other buildings of ecclesiastical interest within a convenient radius of London. The honorary secretary is Mr. E. W. Fletcher, 25, Hendham-road, S.W., of whom inquiries may be made by those interested.

Proposed Architects' Department, Glasgow.

Glasgow Corporation Accounts Sub-Committee of the Finance Committee has agreed to recommend the Corporation to set up an architects' department, in which all the architectural work carried out by the Corporation will be co-ordinated. The proposal provides that the department will be under the control of a supervising architect, who will be responsible for all the plans and designs of buildings erected by the Corporation.

CENTRAL HEATING

A LECTURE on "Gas and Coke-Fired Boilers for Central Heating and Domestic Water Heating" was delivered recently at St. Bride's Institute, E.C.4, under the ægis of the Institution of Engineers-in-Charge, the chair being occupied by Mr. Stephen Lacey, B.Sc., M.Inst.C.E., M.Inst.Gas.E. The lecturer was Mr. S. Adams, A.M.I.H.V.E.

During the course of his remarks, the lecturer said that in the last ten years there had been a remarkable development in this country in the closely allied subjects of central heating and central hot-water supply, and it was anticipated that that development would be continued. It had, no doubt, been due largely to the general change in the habits of the public, with its demand for better conditions and with the tendency of modern life to bring together large numbers of people in public halls, theatres, offices, blocks of flats, hotels, schools and factories. The national effort to abolish the smoke nuisance and so preserve our buildings and improve the health of the community had also had its influence on that comparatively new development.

The generation and application of heat had been a matter of constant research by the fuel industries, the makers of heat equipment and the heating and ventilating institutions, both at home and abroad, and a number of methods had been evolved whereby heat might be generated at some central point and then transferred to the point of application by a fluid medium. At the same time the methods of water-heating had been perfected, and the recent production of many new insulating materials had made possible the storage of large quantities of hot water for domestic supply with the minimum thermal loss. The question of central heating in particular had been tackled in various ways, and many developments had resulted. It had to be realised that ventilation and heating were closely allied subjects; in fact the two were strictly interdependent, and any change in a heating system was liable to affect the ventilation. In illustration of this fact it might be mentioned that there was recently a tendency to eliminate some or all of the chimney flues in buildings in which central heating plant had been installed. Such arrangements obviously affected the air change, and, unless mechanical ventilation was applied, the resulting air movement was very restricted and the conditions were far from ideal. Such flueless buildings seemed in the past few years to meet with the approval of some of the ruling bodies, but it could not be disguised that chimney flues or ventilating ducts provided that natural ventilation and air movement which was so essential to comfort and hygiene. The present tendency was to attach greater importance to the construction of flues or ventilating ducts, irrespective of the method of heating applied. A modern heating scheme was not just something added to a building, but rather an essential part of its construction. For that reason the method of heating to be adopted should be considered at an early stage in the planning, and, if full advantage was to be taken of the latest technical developments, a detailed heating scheme should be worked out on a quantitative basis. The primary considerations in building construction were, of course, strength, utility and resistance to atmospheric effects; but there were others which should be taken into account if the best and most economical heating conditions were to be obtained. One of the most important of those was conduction of heat, for, while it was essential to generate heat in the right quantities and to apply it in the right form, it was equally necessary to conserve the heat liberated in the building. To some extent, heat losses were inevitable on account of air change, but the further heat loss which took place by conduction through windows, walls, ceilings and floors could not be said to serve any useful purpose, and that should be reduced to a minimum. In present-day buildings that loss had been reduced by cavity walls, hollow floors and Mansard roofs of hollow blocks, etc., but apparently very little provision was made for insulation in most cases. Heat losses by conduction could now be calculated with some exactitude, and standard figures were available for the heat transmission per unit temperature difference through walls of different types. Those figures indicated that the heat lost by conduction might be of the order of 50 per cent. or more of the total heat loss, so that the question of insulation might well be worth looking into.

NOISE ABATEMENT IN LARGE CITIES

THREE years ago the City of New York set up a Noise Abatement Commission, which has since been investigating the problem in its many aspects, and has made many useful recommendations for diminishing noise in cities, which, medical science assures us, is responsible for much nervous trouble and is detrimental to efficiency. A Canadian correspondent sends us the following details of the Commission's activities :—

A noise-measuring device, fitted on a big truck, travelled more than 500 miles in the city area. Measured in units called decibels, blasting and riveting were revealed to be the loudest sounds heard in New York, hovering around the 100-decibel mark, or 10,000,000,000 times as intense as the smallest sound that can be detected by the human ear.

With a view to mitigating noises in steelwork, the committee studied fusion welding. Many big buildings have been erected in which welding was used entirely or in part. Sixty-four cities have recognised arc welding in their building codes, and the movement is spreading. The committee recommended that riveting in residential districts be limited to daylight hours, and that similar restriction be imposed within the city on the use of excavating shovels, rock drills, pneumatic steam hammers, hauling apparatus, hoisting machinery, and such heavy equipment.

The sympathy with which most people welcome the anti-noise movement was clearly shown in the ease with which radical improvements were secured by the simple means of writing letters or conferring with those in a position to remedy noise conditions. The subway train companies experimented with a noiseless turnstile. One company spent a large sum in muffling its turnstiles. This was regarded as a notable contribution to the comfort of millions of subway users. New subway carriages were developed to reduce noise to a minimum. Allied to these are noise-dampening linings for the walls of the tubes and special sound-absorbent ballast for the roadbed. Radio abuse at unseemly hours has been dealt with under the law. Loud-speakers on shopfronts are now prohibited.

Much has been done to abate the noises in New York since the setting-up of the Noise Abatement Commission. Dr. E. E. Free, who studied noise problems for many years and who made one of the earliest noise surveys of New York, demonstrated the new noise meter, or acoustimeter, developed by his laboratory, which can record noise measurements with a great degree of accuracy. Dr. Free pointed out that there were three things involved in practical noise measurements; first, frequency analysis; second, amplitude of energy content; third, the noisiness of the noise. This last is the factor measured by the new meter. Certain noises of one pitch annoy human beings more than noises of different pitches, even though they are both of the same intensity. The new instrument, with its ability to act as a human ear, gives a more correct value for noises measured, and this is important for work on machines that are being tested for elimination of objectionable noises.

Paint Marketing Council.

We are informed that the following are additional subscribers to the current paint marketing campaign :—Messrs. A. Boake, Roberts and Co., Messrs. British Industrial Solvents, Ltd., The Chemical Supply Co., Ltd., Messrs. Pilchers, Ltd.

NEW PUBLIC WORKS

Bridlington.

Bridlington Education Committee have accepted the tender by Messrs. Jacques and Greeves, Ltd., of Doncaster and Bridlington, of £16,533 for the erection of the new senior boys' school at Bridlington to be erected on the Priory Butt Hill Estate.

Bristol.

The Bristol Housing Committee has decided to accept the tender of £25,592 of Messrs. E. A. W. Poole and Son, for 88 houses at Bedminster; and those of John Knox (Bristol), Ltd., of £15,108, for 56 houses at Bedminster, and £13,462 for 50 houses at Southmead.

Carlisle.

The Organisation Committee of Carlisle T.C. has resolved that in the year 1934-35 the following schemes of great urgency be recommended to be carried out :—(1) The new Central Schools (£40,000); (2) extensions to the Girls' High School (city's share £7,400; (3) extensions to the Grammar School (city's share £2,870).

Chesterfield.

Tenders have been accepted, as follow, by the Chesterfield Housing Committee for the erection of 138 houses on the Springfield-avenue Housing Estate :—Messrs. A. Chapman and Sons, Ltd., Wadsley Bridge, Sheffield, £19,829 (67 houses); Messrs. Wm. Drabble and Sons, Mosborough, £20,907 (71 houses).

Derby.

A contract for the building of a new senior central school at West Hallam has been placed by the County Education Committee with Mr. J. Harvey, of Mansfield.

Dunstable.

The Town Council is erecting 135 houses, with roads and sewers, on the Northfield Housing Estate, to plans by Mr. T. Alwyn Lloyd, F.R.I.B.A., P.T.P.I. Tenders are now invited, returnable by April 30. Applications to tender must be made by April 14.

Ebbw Vale.

Forty houses are to be erected at the Glyncoed housing site by direct labour. Plans will be prepared by the Surveyor.

Leeds.

One hundred and twenty houses and flats are to be erected on the Gipton Estate by the Corporation. A tender has been let to Messrs. Paul Rhodes, Ltd., Cardigan-lane, Burley, Leeds, at £33,664.

Liverpool.

The Land Steward and Surveyor is to prepare plans for the proposed school for senior boys and senior girls in Lambeth-road.

Manchester.

The City Council are inviting tenders, returnable by April 23, for the erection of 181 residential flats, two lock-up shops, a public hall and clubroom at Smedley Point, Cheetham. Plans are by the Housing Director, Town Hall.

Richmond, Surrey.

Richmond T.C. invite tenders for the demolition of 41 cottages adjoining Lower Mortlake-road, Richmond. Tenders are returnable to the Borough Engineer, Hotham House, Heron-court, Richmond, by April 19.

Stretford.

The old Council offices in Talbot-road are to be converted into a social centre for the borough. Assembly rooms and banqueting facilities will be provided. The ground floor will be utilised for a model clinic and child welfare centre.

Southampton.

Hants C.C. invite tenders for the erection of a police station at Fleet, to plans by Mr. A. L. Roberts, F.R.I.B.A., The Castle, Winchester. Tenders are returnable by April 25.

Warwick.

A set of farm buildings and a cottage are proposed at Warmington, to plans by Mr. A. C. Bunch, F.R.I.B.A., Architect to the Warwickshire C.C. Applications to tender must be made to the Architect by April 9.

LAW REPORTS

KING'S BENCH DIVISIONAL COURT.
Before the LORD CHIEF JUSTICE and Justices AVORY and TALBOT.

DISTRICT SURVEYOR'S FEES UNDER THE LONDON BUILDING ACT, 1930. APPEAL BY BUILDERS.

John Mowlem & Co., Ltd. v. Alfred Lane.

THIS case, which raised an important question under the provisions of the London Building Act, 1930, came before the Court on the appeal of Messrs. John Mowlem & Co., Ltd., the builders and contractors, from a decision of the Stipendiary at the South-Western Police Court, who held that Mr. Alfred Lane, the District Surveyor of Battersea, was entitled to receive from the appellants a sum of £476 10s. as fees he alleged were due to him under the fifth schedule of the London Building Act, 1930. The fees were in respect of the building of a generating station of eighteen million cubic feet at the Battersea Power Station.

Mr. Singleton, K.C., and Mr. Duckworth appeared for the appellants, and Mr. Montgomery, K.C., and Mr. W. Wernick for the respondent, Mr. Lane.

[The case, as it came before the magistrate at the South-Western Police Court, was reported in our issues for July 21 and 28, 1933.]

At the conclusion of the arguments the Lord Chief Justice said the Court were unanimously of the opinion that the appeal should succeed, but in view of the importance of the case they would put their reasons into writing and deliver judgment at a later date.

On March 27 the Court delivered its considered judgment. Mr. Justice Avory, who delivered the judgment, said that the claim by Mr. Lane, the District Surveyor, was only maintained in this case if it could be brought within section 173 (pars. 1 and 2) of the London Building Act. The building in question was found by the magistrate in the special case to be one of the type described in part 4 (*a*) of the fifth schedule list. Mr. Lane did not claim under that head but under par. 3 (*b*) of the fifth schedule, and the claim for fees under par. 4 of the fifth schedule could only be maintained if the building was erected under section 58 or section 59 of the Act (see section 173 (2)). The building was of the kind used as a generating station within the meaning of section 227, and therefore was a special building to which the general provisions of parts V, VI and VII of the Act did not apply. In the opinion of the Court the expression "general provisions" in that section must be construed to mean all the provisions of those parts of the Act, and it was not possible to say, as Mr. Lane suggested, that there were special provisions in those parts of the Act which would apply to such a building, nor to say which were the special provisions which did apply. In the circumstances the question to be determined was whether the building could be brought within the provisions of section 173 (2) of the Act. It could not be brought within the provisions of section 173 (1) because it was not a building mentioned in part 3 of the fifth schedule, being exempted from parts VI and VII of the Act by section 227 and being also probably a building referred to in heading *A* of part IV of the schedule. The result was that unless it could be shown that the building was erected under the provisions of sections 58 or 59 of the Act, the contention of Mr. Lane failed. It could not be said that the building was erected under those provisions. It was clear from the special case that it was erected under section 227. The other question was whether the decision of the magistrate could be supported by the reasons given by him in his opinion. The Court could not follow his view that the building was not exempt from the general provisions of parts V, VI and VII unless so exempted by the L.C.C. The contention that the appellants were not the builders was abandoned during the arguments. Therefore the decision of the Court was that the magistrate's decision in Mr. Lane's favour must be reversed and judgment entered for John Mowlem & Co., Ltd., the magistrate to deal with the costs below if no agreement could be arrived at.

MAYOR'S AND CITY OF LONDON COURT.
Before JUDGE F. SHEWELL COOPER.

WORKMEN'S COMPENSATION POINT.

This case, Arthur Henry Gray, of 21, Ripon-road, Plumstead, S.E., and Asbestos Cement Building Products, Ltd., of 148, Holborn, E.C., involved a decision as to whether or not a man employed as an asbestos fixer was a workman within the provisions of the Workmen's Compensation Acts or an independent contractor.

The applicant met with an accident whilst working under the respondents as an asbestos fixer on October 21, 1931, permanently injuring both arms. He was actually paid compensation from that date to July, 1932, at the full rate of 30s. weekly; it was then reduced to 22s. 6d. per week until November 5, 1933, when it was stopped, respondents having been advised that applicant did not come within the Act and that they had been paying the compensation erroneously. Counsel intimated that the only point at issue was whether the man was a workman or an independent contractor, and submitted the latter. Respondents employed fixers in various parts of the country to fix their asbestos roofing sheets, etc., upon terms of printed instructions and a priced schedule of rates for the work involved; they supplied plans and details of the work and all materials; according to the length of the job, the fixer measured up the work done from week to week, and when completed charged according to schedule for the labour carried out on the material supplied and was paid accordingly by respondents, who, however, retained 5 per cent. of the contract price to cover maintenance of the work for a period of twelve months. Surplus material had to be returned to respondents. The fixer was responsible for engaging and paying any labourers required, and it was an interesting point that, although he paid their National Health Insurance contributions, the respondents insured them against Workmen's Compensation, as well as insuring the fixer himself. A further important point was that whilst working for the respondents the fixer was forbidden to work for any other employer, even though there might be a gap between the contracts with which they provided him.

Plaintiff said he had worked for respondents for 14 years, first under a fixer and subsequently as a fixer. He paid his labourers at daily rates and kept whatever balance there might be between those wages and the contract figure—but there were occasions when there was no balance and he had to stand the loss. The judge commented that this looked much like a case of master in control of men. Cross-examined, witness admitted that he got a fresh contract for each job; engaged his own men; provided tackle and tools, except scaffolding; agreed the liability to maintain workmanship for twelve months and to indemnify the respondents; and that if respondents chose to stop contracts he would have no remedy against them.

The judge came to the conclusion that there must be an award in favour of the respondents, on the ground that the applicant was not a workman to whom the Act applied.

Mr. G. C. Hutchinson (instructed by Messrs. Mills, Lockyer, Church and Evill) and Mr. John Russell (instructed by Mr. Chas. St. A. Butcher) represented the respective parties.

DUMFRIES SHERIFF COURT.

ARCHITECTS' ACTION FOR INTERDICT.

The record has been closed in Dumfries Sheriff Court in an action by five architects belonging to Dumfries, who ask the Court to interdict Dumfries Town Council from accepting or acting upon the award of William Watson, Burgh Engineer, St. Andrews, who gave first place in a competition for designs for a new slaughter-house at Dumfries to the plan submitted by Mr. David Flett, architect, Dumfries. The plaintiffs contend that Mr. Flett's plan did not conform to the conditions of the competition in regard to the size of the sheep slaughter-hall. They also contend that the assessor was bound to exclude the plan under the conditions of the competition, and to make an award from the plans of the competitors who conformed to the conditions.

The Town Council, in their answers, state that the architects were at liberty to provide for further accommodation if they deemed it necessary for the efficient operation of a modern type of slaughter-house. The Council were not upholding or attacking the assessor's award, but standing on the award they were bound to accept and implement it. They had no reason to think that the competitors were not treated on the same footing, or that the assessor did not faithfully discharge his duties, which included impartial adjudication.

The case has been put on the roll for further procedure.—*The Scotsman.*

MUNICIPALIA

THE 1934 edition of the "Municipal Year Book" surpasses all previous issues both in size and in the comprehensive material which it contains. The volume, which runs to 1,527 pages, has been extended this year from 37 sections to 45. Various improvements have been effected. While all previous features are retained, new sections deal with, among other subjects, digest of law cases affecting local government during the year; slum clearance (of particular interest at the present time); museums and art galleries; and fire services. The book gives particulars of all local authorities in England, Wales, Scotland and Ireland; names and addresses of members of councils; names of chief officers; population, rateable value, rates in 1933-34, and numerous other particulars concerning county, borough, urban, and rural districts.

Names of chief officers of Government departments concerned with local administration are given fully. Sections of the book deal with every phase of local administration, among the more prominent being roads and transport, street lighting, housing, town planning, education, public assistance, public health, finance, legislation affecting local government, public libraries, parks and open spaces, public cleansing, mental health services, markets and slaughterhouses, police services, etc. The recent alterations of local government areas under the Local Government Act, 1929, are detailed. Twenty pages are devoted to a review of outstanding features of local government in 1933. It is noted that the year will remain memorable as a year of consolidation, for it witnessed the achievement of the first instalment of the process of "tidying up" the law of local government by the passing of the Local Government Act, 1933.

The Rt. Hon. Sir Hilton Young, M.P., Minister of Health, contributes a preface in which he emphasises that the present year must be made a memorable one in the long history of the movement to secure proper homes for the wage-earners. The Hon. Oliver Stanley, M.P., Minister of Transport, in a foreword to the Roads and Transport section, describes the Road and Rail Traffic Act as an important step towards the co-ordination of transport facilities in Great Britain.

The "Municipal Year Book" is published by The Municipal Journal, Ltd., 3 and 4, Clement's Inn, Strand, London, W.C.2, price 30s. net.

An Architect's Estate.

Mr. Nathaniel Lloyd, O.B.E., F.S.A., F.R.I.B.A., of Great Dixter, Northiam, Sussex, who died December 8 last, aged 66 years, left estate of the gross value of £67,803, with net personalty £57,388.

PARLIAMENTARY NEWS

Density of Working-Class Houses.

LORD MOYNE called attention to the effect of town-planning regulations on the provision of working-class houses in Greater London. He said that there was a great field in the suburbs for the building of this class of house by private enterprise, and restrictions that would have the effect of increasing the rents should be avoided. He had evidence which showed how local authorities compelled builders to adopt more costly standards than they applied to themselves. It was unreasonable that varying standards should be allowed to be applied which operated against private enterprise. Either the Ministry of Health or some other authority such as the Greater London Zoning Committee should have power to break through these zoning regulations where it was shown that it would be in the interests of providing working-class accommodation.

LORD GAGE said that it had hitherto been considered that the density of working-class houses erected on open land should not exceed 12 to the acre. In that was included the area occupied by roads. Very few proposals had been made to the Minister for a higher density, and building which was confined to 12 houses to the acre need not necessarily be more costly.

Building Societies' Advances.

In the House of Commons Mr. HAMMERSLEY asked the Minister of Health if his attention had been drawn to the reluctance of building societies to advance 90 per cent. of the cost of houses intended to be let to persons of the working classes, as contemplated by the Housing (Financial Provisions) Act, 1933; whether he was aware that certain building societies limited their advances to 90 per cent. of their own assessment of the value of these houses; and, in view of the consequent hold-up in the provision of these necessary houses, what action he was taking in the matter.

SIR HILTON YOUNG said that some building societies had not felt able to advance moneys under the arrangement contemplated in Section 2 of the Housing (Financial Provisions) Act, 1933, but he was satisfied that any person desiring to erect houses under that arrangement was able to find a building society prepared to make advances on the terms agreed for the purpose of the Act. As regarded the second part of the question, the arrangements agreed with the building societies in connection with the Act contemplated advances up to 90 per cent. of the building societies' valuation. That seemed a normal and proper procedure.

Parks for Slum Clearance.

MRS. RUNGE asked the Minister of Health whether he was considering the desirability of recommending to local authorities engaged in slum-clearance work in industrial districts the temporary use of public parks and open spaces for providing decanting accommodation.

MR. SHAKESPEARE said that his right hon. friend would give sympathetic consideration to any practicable proposals submitted by local authorities for the temporary use for decanting purposes of parks and open spaces in their ownership.

A National Maritime Museum.

SIR A. CHAMBERLAIN asked the Prime Minister whether he had any information to give the House as to the steps taken to fulfil the undertaking given in 1927 that the range of buildings at Greenwich which included the Queen's House would be devoted to the purposes of a national maritime museum.

MR. RAMSAY MACDONALD said that the matter had been under consideration since the buildings in question were vacated by the Greenwich Hospital School, and H.M. Government had recently received a generous offer from Sir James Caird of his magnificent collections, with a promise, in addition, to defray the cost, estimated at £29,000, of putting the buildings in order for their reception. The Government had expressed their warm appreciation of this offer, and they proposed to introduce into Parliament at an early date a Bill for the establishment of a National Maritime Museum. The contents of the naval museum at Greenwich would be transferred.

Slum Clearance Officers.

In reply to Sir W. Sugden, SIR HILTON YOUNG said that 65 officers of various grades in the Housing Division of his Department were engaged wholly or partially on slum-clearance work under the Housing Act, 1930.

Workmen's Flats.

MR. CHORLTON asked the Minister of Health if, in view of the desirability after slum clearance of rehousing on site and the necessity of low rents, he would consider holding a competition of designs to secure the most economical form of storied house for workmen's flats.

SIR HILTON YOUNG said he thought this was a matter which should first be considered by the Committee on the construction of tenement buildings, which he proposed to appoint.

Cefn Bryn Cairn.

In reply to a question by MR. GRENFELL in regard to Cefn Bryn Cairn, MR. WOMERSLEY said that he understood that no stones had been removed from the cairn itself, but only loose rocks from the hill surrounding the cairn. Steps were being taken by the owner to ensure that nothing should be done to injure the setting of the cairn.

INQUIRY BUREAU

QUESTIONS.

Cold Water Cisterns: Silent Filling.

SIR,—I shall be glad if you will inform me whether there is any patent fitting which will make the filling of cold water cisterns absolutely silent. I have the extended tube in use from an equilibrium ball-valve, but the trouble is that the water gets by this tube. Perhaps some of your readers can suggest a remedy. W. V. L.

Damage by Woodpeckers.

SIR,—I have under my care a church whose spire is covered with oak shingles. These have been damaged badly by the depredations of woodpeckers. Is there any manner in which the oak may be treated to prevent their attack? SUSSEX.

Definition of Bungalow.

SIR,—What is the definition of a bungalow? I ask for the reason that a client of mine has purchased a site, on which there is a restriction that only a bungalow may be built. I am anxious to give an extra room in the roof. Would this action invalidate the claim of the building to be a bungalow? FLAX.

Loads on "Made" Ground.

SIR,—I am planning a structure of which part will be on "made" ground which has stood for about 15 years. The structure is steel-framed, and an average load on each stanchion would be, I suppose, about 150 tons. Do any of your readers know of a practical test which I can apply to find the bearing capacity? STRESS.

Seating in Restaurant.

SIR,—I am designing a restaurant-café of a seating area of 2,700 square feet. The room is approximately rectangular. Can you inform me what is the maximum number of persons that can be seated at once, and also the best proportion of tables for four persons to tables for two? TEA.

Curing Dampness in Brick Wall.

SIR,—Can you recommend a method of curing dampness in brick walls? The dampness in question is in an outbuilding with 4½ in. single pressed brick walls built in lime mortar. The moisture appears to come through both the bricks and the joints. I should prefer some outside method of treatment, other than rendering, which will not, if possible, alter the colouring of the bricks, though this is not essential, the main point being to get the place watertight.

J. BURDON.

VIBRATION IN BUILDINGS

IN a paper on "Vibration in Roads and Buildings," read before the Public Works Congress, Mr. C. H. Bradbury, A.M.Inst. C.E., said that vibration, whether in the form of tremor or noise, was probably the biggest curse of modern civilisation. The phenomenal increase in motor traffic, together with the increasing use of machinery, had gone far towards aggravating the nuisance, and it was now becoming realised that serious steps must be taken to protect buildings from vibration and individuals from noise. The fact that methods which had proved successful in some instances had, for no apparent reason, failed in others, showed that the subject was as yet only partially understood.

After tracing the major causes of transmitted vibration, and dealing with the methods of either eliminating or isolating the cause, the lecturer stated that vibration control should be used wherever possible for a number of reasons, the most important of which were :—(*a*) a whole area might be relieved by dealing with the cause, whereas more expense and less general relief were entailed by dealing with buildings separately; (*b*) existing buildings, particularly ancient monuments of historic interest, were virtually impossible to isolate.

Nevertheless it was now becoming increasingly common practice to isolate new buildings in districts where traffic or machinery vibration was prevalent, the main object being to guard more against the future than the present-day conditions. Before a building could be successfully isolated it was necessary to understand the types of vibration that were possible, and to get a clear conception of these types of vibration a simple analogy would be helpful. The simplest analogy was a pair of ordinary football goalposts, in which the two uprights represented the walls of the building viewed in section, and the crossbar an upper floor or the roof. The types of possible vibration were now threefold. The uprights, if disturbed by a vertical pulsating force, might vibrate as struts, or, if disturbed by a horizontal force, might vibrate as cantilevers with the fixed points in the ground, while the crossbar, if disturbed by a vertical force, might vibrate as a beam. The frequencies of a simple system such as that described could be readily calculated, but, unfortunately, even in the case of a single-story building, too many unknown factors were present to render calculation possible, while the adding of further stories rendered the possibility of calculation even further remote. The fundamental modes of vibration as exemplified by the goalposts remained, however, so that with those in mind it was possible to form some idea of the principles of building isolation.

If it was anticipated that vibration would be transmitted to the building through the ground, a layer of insulating material must be placed between the girder feet and the concrete raft forming the foundation. If vibration was anticipated from machinery installed on the ground floor, the foundation of the machinery must be separated from that of the building by an insulating layer. If vibration was anticipated from machinery installed on one of the upper floors, it was preferable not to use insulation, but either to arrange the machinery for complete balance, or, after installation, to adjust its speed to avoid synchronism. Of the two methods the former was preferable, and in the case of engines extremely good balance could be obtained by having six or more cylinders.

Forest Products Research Laboratory.

A series of "open days" has been arranged at the Forest Products Research Laboratory, Princes Risborough, as follows :—Thursday, April 26, general public; Thursday, May 24, schools other than technical schools; Wednesday, June 20, technical schools and institutes; Thursday, October 11, general public.

THE BUILDING TRADE

MATERIALS AND CONSTRUCTION IN THE LIGHT OF MODERN RESEARCH—XIII

By B. PRICE DAVIES, F.S.I., L.R.I.B.A., M.T.P.I.

DEFECTS IN TIMBER.

To the writer of specifications for buildings and public works it can be stated that the perfect timber does not exist. What has to be done is to limit the imperfections to relative degrees according to timber products and requirements. A special effort is being made by a joint body consisting of members from various institutions with a view of preparing a general standard specification for timber. The Royal Institute of British Architects, the Timber Trades Federation, the Building Research Station, and the Forest Products Research Station form this joint body. The project is no easy matter, for supplies of timber from various parts of the world have individual standards, and what is a fair quality for one supplier proves to be a good quality with another. Not only that, but various species of timbers, and even the same species from different parts, have a wonderful range of individual characteristics.

A draft specification has already been issued, entitled "List of Terms and Definitions Applicable to Softwoods." It contains much useful information, but is marked "Confidential, not for publication." In this form it is issued for criticism.

Let us review what are considered to be defects.

Waney edge is that edge or corner of a timber which is not full square. Sapwood is excluded by some specifications, but this is generally impracticable. Mention has been made of the distinction between "bright sapwood" and "green sapwood."

For timbers to be impregnated with preservative, sapwood is considered an advantage on account of its greater power of absorption. Sapwood can be allowed in work if not exposed to moisture or that the colour is detrimental, as in high-class work.

Shakes are generally longitudinal, radial or concentric, the latter being termed "arc shakes" if not a complete ring, and "ring shakes" if a complete ring. It is extremely difficult to obtain sections other than very small ones without some shakes. What can be asked for is freedom from shakes of excessive size or of detrimental effect.

KNOTS.—Their size and number count for a good deal, but it is difficult to obtain a wood free from knots when dealing with North European timbers. Large knots and loose knots can be forbidden, while in joinery work knots can be cut out where on the edge of a member and a piece of wood keyed in instead of it. This, however, is not good for external work, as in an outer door, for instance.

CASE-HARDENING.—This is caused by the quick drying out of the surface; it is liable to be caused in hot weather with air seasoning, and by injudicious heating with kiln seasoning. The wet interior prevents the outer layers from shrinking, the tension causing a checked surface. If sawn in two, the pieces will cup outwards; if left for some time they will cup the reverse way, for the set face will not be able to shrink to the extent of the newly-cut face. This is the action referred to in connection with the specification of finished sizes. For dressing case-hardened timber it is advisable, therefore, to dress it equally on both sides. Cupping (also referred to as warping) is caused by the tangential shrinkage being greater than the radial shrinkage. A face exposed to heat or extreme drying, while the other face is not so exposed, will also cause cupping.

Collapse.

This is a very serious defect, and timber suffering from collapse should not be used for building work. It is brought about by too rapid seasoning. The water is drawn from the cells so rapidly that in preventing a vacuum the cell walls collapse. It is claimed that by means of judicious kiln seasoning that timber suffering from this defect can be re-conditioned.

DEAD-WOOD OR WRACK.—This is timber which has died standing (*i.e.*, before felling), or has become over-matured, and should not be used.

GROWTH.—For timbers, the number of rings per radial inch should be given; and for softwoods, a maximum of 20 could be adopted.

SIZES NOT UNIFORM.—This is not a serious item with European timber, but with American and Canadian timber the "tolerances" are too great.

Specification Clauses.

For a specification, a suggestion is to get a series of full-sized samples and set up a number of grades from these. They could then be photographed and described, while conditions as to extent of permissible defects could be laid down. In a way, this has been done in B.S.S. (No. 435—1931) for dressed kerbs, but the specification for wood will have to be more extensive than that. Defects which could be banned are decay in any form, collapse, dead-wood or wrack-wood, timber with less than six annual rings per radial inch, un-uniform sizes, and timber not properly seasoned. In connection with the latter, the moisture content should be stated.

If strength is required, this should be stipulated, and tests for specimens stated on the lines of B.S.S. (No. 373—1929), "Methods of Small Clear Specimens of Timber." This B.S.S. gives methods for testing for moisture content, compression (parallel and perpendicular to grain), impact, hardness, shear parallel to grain, cleavage, tension (perpendicular to grain), specific gravity, radial shrinkage, tangential shrinkage and volumetric shrinkage.

The clause for softwoods given in the Report of Manchester Architects' and Builders' Joint Consultative Board (1930) is as follows:—

"WHITE AND RED DEAL, PITCH PINE, YELLOW PINE.—All timber to be sound bright, square-edged, and thoroughly seasoned. To be free of injurious shakes, large, loose or dead knots, and not to contain more sapwood than the following percentages:—

Carpentry timbers	...	10%.
Ordinary joiners' work	...	7%.
First-class joiners' work	...	5%."

The writer has in his Housing Specification (1931) the following points, which are other than those included in the above: "Central European timbers and decay in any form prohibited, also open-grained timbers, wrack or dead-wood. Only new timber (*i.e.*, not second-hand timber) will be allowed."

For exposed woodwork and joinery, red or yellow deal of thirds quality, or unsorted Finnish or Swedish red or yellow deal, or Siberian yellow pine. The window sills are of good quality English oak. The above clauses were framed after consultation with two timber merchant friends who are in different districts.

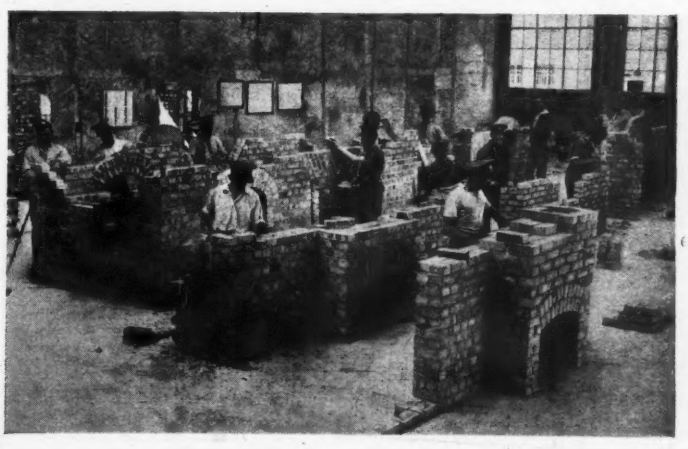
ARMY VOCATIONAL TRAINING

TRAINING BUILDING CRAFTSMEN AT ALDERSHOT.

WE have referred on several occasions in these pages to the work of the Army Vocational Training Centre, chiefly in connection with the exhibit that for many years past has formed such a prominent and instructive feature of the Aldershot Show, which is held every July in the Rushmoor Arena. Recently we had an opportunity of visiting the School itself, at Thornhill, Aldershot, where, under the guidance of the Commandant, we made a complete tour of the various shops and saw some hundreds of soldier-students at work, learning a number of trades embraced by the building industry and preparing themselves for useful and profitable employment on their return to civil life.

The School, which occupies a considerable area, includes a score or more of commodious and related buildings specially designed and equipped for instruction purposes, all conveniently grouped around an administrative block. Most of these buildings have been erected by the students themselves. The accompanying plan shows their present disposition, but the School is no immutable organism; indeed, changes, improvements and additions are almost constantly being made to the buildings in order to adapt the mechanism of instruction to the steadily increasing demands that are being made upon it. At present the capacity of the Centre is 500 students.

Over the ordinary type of civilian school of building the A.V.T.C. has a distinct advantage, inasmuch as, after the essential preparatory jobs and exercises have been done, it is able to employ its students on permanent productive work, the School always having in hand a certain amount of work for the Royal Engineers, including the erection of new buildings, and repairs and decorations of various descriptions. Thus the student,



ARMY VOCATIONAL TRAINING CENTRE, ALDERSHOT: Students learning the rudiments of bricklaying.

RUNNING A FIBROUS CORNICE.

for the major part of his six months of intensive training, has the advantage of working "to full size" on something that will not be pulled down as soon as it is completed, but will stand as a record of his competence as a craftsman. Needless to say, this factor has been found to be a great stimulus to interest in, and mastery of, a craft.

Another important feature of the training is that no rigid programme of progress is laid down. It is realised that the men will not all have the same adaptability and capacity for learning. Therefore, every man is allowed to go at his own pace, and no one is put on to more advanced work until he has mastered the earlier stages of his craft. It is interesting to know that, in spite, or it may be because, of this flexibility in the training, a high general level of efficiency is attained by the students at the end of their six months' instruction.

The visitor to the A.V.T.C. is at once struck by its "civilian" character. Ordinary job procedure is followed, and the instructors themselves are civilians, specially selected for their practical knowledge and teaching ability. The academic and the purely theoretical have little place in the school's curriculum, though there is a daily "shop talk," lectures are given, films of instructional interest are shown, and visits are paid by the students to the works of manufacturers of various kinds of building and decorative materials to study at first hand processes of manufacture and methods of application and uses. Above all, students are encouraged to think for themselves and to ask questions, and we are assured that the quickness with which they acquire knowledge is extraordinary. This, no doubt, is explained by the fact that the modern soldier in his military training is constantly learning something. In particular, he has to familiarise himself with complicated mechanism, and he thus develops a special faculty for mechanics which is of the utmost value in mastering those branches of the building trade that employ machinery.

The system of the School is briefly as follows :—

From the drawing and estimating office, a job is passed in its approved form to the particular shops involved. Students are present at the issuing of materials and follow a job through its course in the shop until it is ready for delivery or transfer to another shop. Time sheets, based on civilian practice, are made up and the whole of the documents are returned to the office for costing and filing.

A system of progressive reports is in operation, each student being the subject of a report each month. By this means, "misfits" are either transferred to more suitable trades or, if unlikely to benefit by the courses, are weeded out to make room for other applicants. Students are encouraged to subscribe every week towards a kit of tools.

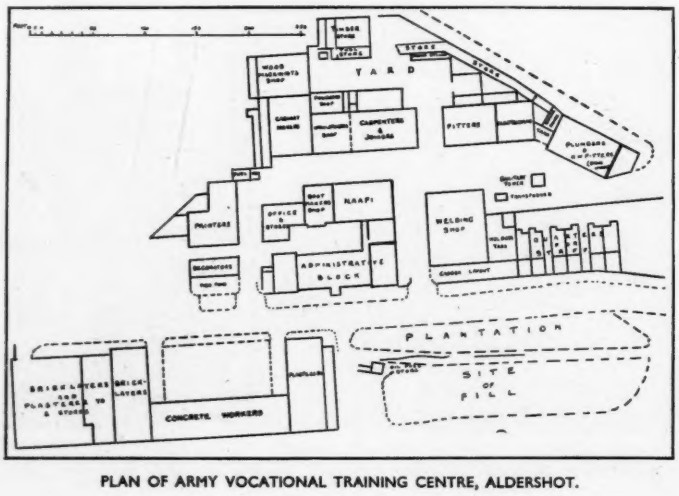
In the space at our disposal it is impossible to describe each shop and its equipment in detail; let it suffice to say that the workshops, plant and machinery are equal to the standard of all but the most highly specialised civilian works. The subjects taught are brickwork, fibrous and solid plastering, painting and decorating, carpentry and joinery, wood machining, sign and poster writing, cabinet making, french polishing and upholstery, plumbing, heating and domestic engineering, including copper tube fitting, motor mechanics, oxy-acetylene welding and cutting, electric welding, sheet metal working, engineering fitting and electrical work. Judging by what we saw on the occasion of our visit, the instruction given is very efficient and the work turned out by the students is of a first-class character.

One feature of the School's equipment deserves special mention, and that is the "sanitary tower." This is a brick structure, four stories in height, to which access is obtainable only from the exterior in order to accustom the students to working at various heights and to the use of scaffolding. The tower itself is used for practice in the installation of complete sanitary systems and electrical equipment. The Commandant is particularly proud of this feature, and claims that it is the only thing of its kind in this country. Certainly, it serves a variety of purposes, and is a specially valuable adjunct to practical training.

The A.V.T.C. is doing a particularly useful work in a very efficient way, and no building trade employer need hesitate to engage a man who has passed successfully through the School. With the knowledge which he has obtained and with his habit of discipline, the ex-soldier craftsman should make an excellent worker.

One final point that will be of special interest to taxpayers : The School is run at a very low cost, every penny allotted to it as a training grant being returned to the public from work done for the military authorities. The money obtained from School fees (every soldier having to pay for his training according to his rank) goes towards the pay of the instructors.

We understand that the School will be exhibiting at the Building Trades Exhibition at Olympia this year, where an opportunity will be afforded to the public for judging the excellence of its work. The Commandant is glad to show visitors round the School at any time.



PLAN OF ARMY VOCATIONAL TRAINING CENTRE, ALDERSHOT.

SLUM CLEARANCE AND COMPENSATION

A PAPER on "Some Aspects and Problems of Slum Clearance" was read before the Auctioneers' and Estate Agents' Institute of the United Kingdom by Mr. Frank Hunt, C.V.O., in which he touched upon various aspects of the problem as to compensation in regard to slum clearance. He stated that the basis of the legislation in connection with slum clearance was the removal of a public nuisance which was dangerous or injurious to health. The criticism directed against the special terms of compensation, which was admittedly of a penal nature, must be regarded from that point of view. It was not sufficient to suggest that if land was being taken for a public purpose its market value should be paid. The local authority did not, merely for the sake of purchase, or, indeed, for the purpose of providing sites for buildings, take slum property, but must, under the Statute, do so if the premises were dangerous or injurious to health. And as one of the essential preliminaries for the submission of such a scheme was that the authority must satisfy the Minister of Health that other accommodation was or would be made available for persons of the working classes to an extent equivalent to that being destroyed, they were assuming a heavy responsibility for the erection of new accommodation. As it had not been possible for such accommodation to be provided since 1919, and still could not be provided, except at a substantial loss, the land, when it passed into the hands of the housing authority, was clogged with a restriction involving a large financial liability, and it would appear to be not inappropriate in those circumstances to fix the price to be paid for the property, which was so condemned as a public nuisance, on the basis of its value in the hands of the local authority subject to this heavy statutory liability.

The practical problems which arose in handling slum-clearance were many, especially in regard to management of tenants and prevention of overcrowding in the new quarters. It was to be remembered all through that in transferring people from a slum area to new accommodation the continuance of the overcrowded conditions could not be permitted and the tenants in the new buildings must take more accommodation than they had been accustomed to in order to have sufficient sleeping accommodation, having regard to age and sex. Handling the problem was not easy, but, in spite of all that, his experience was that, in the main, they appreciated what had been done for them and struggled hard to discharge their obligations, particularly in the payment of rent.

The lack of suitable rehousing sites was another great difficulty which tended to hinder progress in the densely-populated parts of the cities. Some means must be found of providing sites upon which rehousing operations could be commenced, thus enabling a decant to be made of the persons on the first portion of the area to be cleared, and to provide accommodation for the excess population over and above the 80 to 90 per cent. which could be accommodated either on the reconstructed area or on outlying cottage estates. Without the initial displacement of persons no progress could be made. Where vacant sites were unobtainable, recourse must be had to other expedients; industrial property available for disposal might be acquired, but the cost was often prohibitive; the possibility of a closer development on the cleared site than had hitherto been accepted as desirable, higher buildings, the building over of railway cuttings, canals and open spaces were all being investigated, but there also the cost was great.

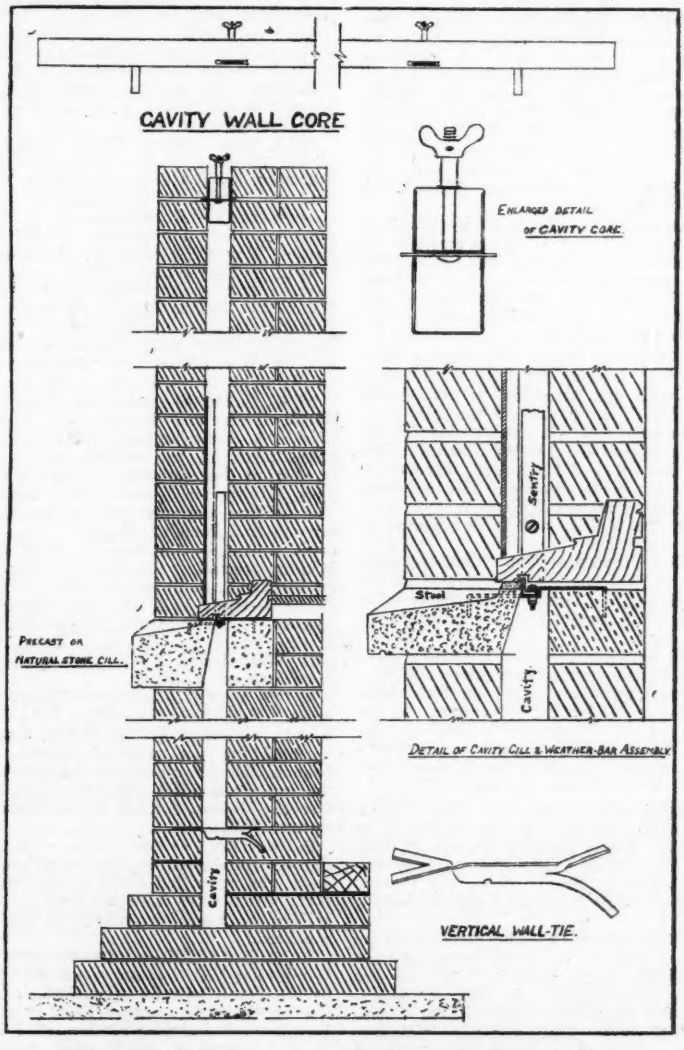
NEW INVENTIONS

Hollow Walls.

THE accompanying reproduction (writes a correspondent) shows three inventions which will shortly be on the market. With regard to the first, the cavity core, this is constructed of galvanised iron in the form of an inverted U, and has rotating pins with discs attached, the discs having parallel sides and rounded ends. The core is made up in suitable lengths, and a set of pins and discs is fitted at a convenient distance from each end. The method of procedure is to set the core after the first course—inner and outer—has been laid, the rounded ends of the discs projecting so that they lie on the bricks each side of the cavity. The next course of brickwork is then laid, and during this process the bedding mortar, instead of falling into the cavity, flushes itself against the sides of the core, thus making a perfectly sealed bed, but also keeping the cavity clear of all mortar droppings. The next step is simply to grip and turn the rotating pins, which withdraw the discs, and the core is then clear to be lifted up and set in position as before for the next course. In this way the walls are carried up to the eaves without the trouble of clearing out the droppings afterwards, and, of course, with the additional advantage that the mortar joints within the cavity are equal to being pointed and are also densified with pressure against the core, thus ensuring that the frogs in the bricks are properly filled.

The next invention shown on the drawing is the cavity cill and weather-bar assembly, which overcomes former defects in cill construction in a simple and efficient manner. The cill, which may be of natural stone or of the pre-cast type, is made to the shape shown, and a shallow chase and sinking are formed in each stool. A pre-cast or stone backing is also made with sinkings to correspond with those in the cill stools, and when the cill and backing are set in position the "kneed" ends of the metal ties are inserted in the sinkings and grouted in with cement, thus forming a simple tied cavity cill.

The next part of this assembly is the weather- or water-bar, which is a length of angle iron to which the ties are bolted near each end, the front of this weather-bar being pushed against the back edge of the cill when the ties are set in their sinkings. Being located well forward, this has the advantage of requiring a minimum of bedding mortar under the wood cill; all that is necessary, when fitting in the window, is to slip a thin strip of wood under the wood cill at each end on top of the backing stone to regulate the thickness of the bed. This leaves a space which keeps the wood cill clear at the back, therefore preventing moisture from decaying the cill. This type of cill is suitable for use in solid walls, as air ducts could be formed on the lower edge of the backing stone, through which the air from behind the lathing could circulate, finding its way through *via* the underside of the case cill and cill board.



DEVICES FOR PREVENTION OF DAMP PENETRATON IN HOLLOW WALLS.

The final item in the assembly is the provision of "sentries" at each end to prevent sash weights from falling into the cavity and being lost when a rope breaks. This obviates the necessity of filling in the back of the weight boxing with a panel, thus effecting an economy. These "sentries" are formed of galvanised iron straps and are quickly detachable from simple brackets which are bolted to the ends of the weather-bars.

The last invention shown is a vertical wall tie. This is a metal tie of simple design which presents a vertical edge within the cavity, and any mortar droppings which may fall on this type of tie simply split on the sharp upper edge and drop off, thus saving the cost of protecting or cleaning the ties, as there is no possibility of mortar bridges forming. This type of tie may be used in conjunction with or apart from the cavity core, as, by its use, even if no mortar droppings occur, condensation cannot remain sufficiently long on this tie to permit capillary attraction to draw it into the inner wall, which usually results in damp spots showing on the plaster.

A WATER "GRID"

IN a paper before the Public Works Congress on "Pooling of Supplies by Interconnection of Water Undertakings, Regional Grids and Trunk Mains through Rural Areas," Mr. Alan E. L. Chorlton, C.B.E., M.P. (President, Institution of Mechanical Engineers), said that the water supply of this country and its proper distribution to the inhabitants had become one of the most important questions of the day. It might be said that that had always been so in principle, and no doubt many believed that it had consistently been followed out in practice, but the long-continued fine dry weather last summer had revealed, through many channels, how very incomplete, how piecemeal, that practice had been. One might almost say that it was the best example of the development of any public supply we had on intensely individualistic lines. The supply by nature was a common one; rain was anybody's, but the collection, control and distribution had, it was alleged, been left to the unordered grasp of those with long pockets who came first. The scarcity that had lately been experienced in so many districts had again focussed the urgent need for action for the carrying out of some adequate scheme or schemes of supply with the least delay. That those regional supply networks should form part of a complete national plan was certainly what would normally be expected to-day. The speaker then outlined a scheme for the creation of local networks or "grids" over regional areas, using, if possible, local sources of supply. If they were not available in sufficient quantity, then the water must come from elsewhere. In any case, such regional grids should be inter-connected to those lying nearest to them. The problem was, in the main, a twofold one :—(1) To devise regional schemes of supply for rural areas, using, if at all possible, water from sources near at hand; (2) to make use of the water supplies of the North and the industrial areas in which redundancy would probably occur. The main criticism of a national widespread inter-connected supply seemed, said the speaker, to be based on the idea that it would be carried out as a whole at once. That was not at all the intention, but it was strongly emphasised that anything done now should form part of a complete national plan and not a continuation of the individualistic method so largely followed up to now.

R.I.B.A. Prizes and Studentships.

We have received a copy of the R.I.B.A. Prizes and Studentships Pamphlet for 1934-1935, which contains full information upon the various prizes and studentships, together with, where applicable, the detailed programmes for the competitions. Copies of the pamphlet are obtainable at the R.I.B.A., price 1s., exclusive of postage.

NEW BUILDINGS IN LONDON

ACTON. — Factory. — Messrs. P. J. Williams and Co., Ltd., 39, Shaftesbury-avenue, W.1, have under consideration the building of a factory in Victoria-road, W. The architect is Mr. Sydney Clough, F.R.I.B.A., Cecil Chambers, Strand, W.C.2. No tenders yet invited.

ACTON. — Premises. — Messrs. Allnatt, Ltd., Park Royal-road, N.W.10, are to build a factory and offices on the Chase estate for Messrs. L. Lazarus, Ltd., 23, Moor-lane, E.C., and not as stated in our last issue. The plans are by Mr. F. E. Simpkins, Estate Offices, Chase-road, W.4.

BANSTEAD.—Post Office.—Also sorting office is to be erected for H.M.O.W. by the Building and Public Works Construction Co., Ltd., of Swindon.

BARKING.—Ward.—The T.C. has prepared a scheme consisting of one ward block of 26 beds and one cubicle block of 12 beds as the second portion of the Barking hospital.

BARNES.—Flats.—The T.C. has approved the tender of Messrs. E. H. Wales, Ltd., 35a, High-street, S.W.13, in lieu of a tender withdrawn, for the erection of a block of 33 flats in High-street, Mortlake, S.W. The plans are by Mr. F. P. Kindell, Borough Engineer and Surveyor.

BEDFORD-STREET. — Reconstruction. — "The Green Man," Bedford-street, Strand, W.C.2, is being reconstructed for Messrs. Watney Combe Reid and Co., Stag Brewery, Pimlico, S.W.1. The builders are Messrs. H. and J. Taylor, Canada House, Hither Green, S.E.

BROMLEY (KENT).—Shops.—Mr. J. M. Colvin, Broadway House, Bromley, Kent, is architect for alterations and additions to existing shops at 83-87, London-road, for H. J. Searle and Son, Ltd. The contractors are Messrs. George Parker and Sons, Ltd., 124, Sumner-road, S.E.15.

BROMPTON-ROAD. — Flats. — A redevelopment scheme in Brompton-road is to be undertaken. The nine shops and upper parts, 78-94, Brompton-road, are to be demolished, and erected on the site an eight-story block containing modern shops and from 100 to 120 flats. The whole scheme will cost about £250,000. Messrs. G. Val Myer and Watson-Hart, Abbey House, Victoria-street, S.W.1, are the architects. Messrs. Griggs and Son, Ltd., 100, Victoria-street, S.W.1, are the building contractors and will also carry out the demolition.

CHELSEA. — Flats. — Messrs. J. Stanley Beard and Clare, 101, Baker-street, W.1, are the architects for flats to be erected at Drayton-gardens, S.W. Messrs. Y. J. Lovell and Son, Bathurst-street, Lancaster-gate, W.2, are the builders.

CHELSEA.—Flats.—The Chelsea Housing Improvement Society, Ltd., proposes to build three blocks of workmen's flats in World's End-passage. The plans are by Messrs. A. and J. Soutar, 8, King William-street, W.C.2.

CHISWICK. — Estate. — The Chiswick Curve estate is proposed to be developed by the building of some 80 flats. The architects are Messrs. Evelyn Simmons and Cecil Grellier, F. and A.R.I.B.A., Palace Chambers, Bridge-street, S.W.1. No contracts.

CLIFFORD'S INN.—Flats.—Clifford's Inn, Fleet-street, E.C., has been acquired by Town Investments, Ltd. The company intend to clear a large portion of the site and to cut a road from Chancery-lane into the Inn. It is also intended to build large blocks of flats and chambers. Messrs. Trehearne and Norman, Preston and Co., 83, Kingsway, W.C.2, are the architects.

COLINDALE. — Factory. — Messrs. Edmunds, Walker and Co., Ltd., 6, Newman-street, W.1, are to build a factory with offices, stores, canteen, etc., in Edgware-road, N.W. The builders will be Messrs. Streek and Co., Ltd., 63, Tranquil Vale, Lee Green, S.E. The architect is Mr. S. R. Miller, F.R.I.B.A., 36, Great Ormond-street, W.C.1. Work will start soon.

CROYDON.—Warehouse.—The C.B. has approved plans submitted by Messrs. M. Peaster and Son, 19, High-street, Swanley Junction, Kent, for a warehouse at 377, Mitcham-road, for Messrs. C. A. Smallbone, Ltd.

DENMARK - STREET. — Rebuilding. — Messrs. Townsends (Builders), Ltd., 24, Dean-street, W.1, are rebuilding No. 23, to designs by their own architectural staff. The steel-work is being carried out by Messrs. Smith Walker, Ltd.

EALING.—Flats.—Mr. J. Gould proposes to build a block of flats in Longfield-avenue, W.5. The plans are by Mr. Ernest Schaufelberg, 106, Jermyn-street, S.W.1. No contracts placed.

ELTHAM.—Tenements.—The Woolwich Borough Engineer has prepared a scheme and estimate for 140 two-bedroom flats at £43,400; 232 three-bedroom flats at £83,520; and 86 three-bedroom houses at £28,380, on the Middle Park estate, and the Housing Committee recommend the work to be carried out by direct labour. The total cost is estimated at £177,730.

FOREST HILL. — Exchange. — H.M.O.W. have placed a contract with Messrs. F. J. Moreton and Son, 171, Gipsy-road, S.E.27, for erection of a new telephone exchange.

GREAT PETER - STREET. — Flats.—The Peabody Donation Trustees, 15, Buckingham-street, W.C.2, propose to build a block of working-class flats in Perkins Rents, S.W. The plans are being prepared by Mr. H. Victor Wilkins, F.R.I.B.A., 12, York-buildings, W.C.2. No contracts placed.

HACKNEY. —Rebuilding. — Messrs. Truman, Hanbury, Buxton and Co., Ltd., 91, Brick-lane, E.1, are to have the "Durham Arms" public-house, Hackney-road, rebuilt from plans by Mr. Arthur E. Sewell, L.R.I.B.A., architect, of the same address. The quantities are by Mr. William Gilbert, L.R.I.B.A., 74, Broad-street-avenue, E.C.2, and the work has been placed with Mr. George Barker, 48, New-road, Whitechapel, E.1, at £5,866.

HAMMERSMITH.—Town Hall.—The B.C. has recommended that the plans prepared by Sir A. Brumwell Thomas, F.R.I.B.A., F5, Albany, Piccadilly, W.1, for the new town hall at Brook Green be submitted to the L.C.C. The site and building work is estimated to cost £200,000.

HAVERSTOCK HILL. — Hostel. — The Governors of Charing Cross Hospital are to proceed with the remaining portion of the nurses' hostel on a site at the corner of England's-lane and Haverstock-hill, Hampstead, known as St. Mary's Convent. Mr. Harold Goslett, F.R.I.B.A., 28, Theobald's-road, W.C.1, is the architect. The new wing will be built by Messrs. William Willett, Ltd., Sloane-square, S.W.1, and it is expected to cost about £30,000.

HAYES. — School. — The Middlesex E.C. recommend that the property known as the Manor House be purchased, for the erection of a secondary school and the provision of playing fields.

HAYES. — School. — The Middlesex E.C. has recommended that the tender of Messrs. J. Stewart and Sons, Ltd., of Tottenham, amounting to £13,768 7s., be accepted, for the erection of an elementary school on the Grange Park Estate, Hayes, in accordance with the plans prepared by the County Architect, Mr. W. T. Curtis, F.R.I.B.A.

HENDON.—Additions.—The Metropolitan Police propose to build a large block, to be called Peel House Training College, at their new Police School. The plans are by the Police Architect, Mr. G. Mackenzie Trench, F.R.I.B.A., New Scotland Yard, Whitehall, S.W.1.

HENDON.—Factory.—The erection of an up-to-date factory is commencing on the North Circular-road, Hendon, N.W., for the Pullman Spring-Filled Co., Ltd. Messrs. Commercial Structures, Ltd., 38-44, Canal-road, N.1, have been entrusted with the building operations. The building contract has been let at £6,350.

KINGSTON-ON-THAMES. — Flats. — The T.C. has approved plans for the erection of 192 flats on the Norbiton Hall, London-road and Birkenhead-avenue sites for Mr. W. A. Ball.

KINGSTON - ON - THAMES. — Store. — For the construction of a new store building at the Electricity showrooms, 17, High-street, the T.C. has resolved that the tender of Messrs. W. H. Gaze and Sons, Ltd., Kingston, be accepted at £1,933.

KINGSTON-ON-THAMES. — Housing. — The T.C. has made arrangements to purchase for £190 a plot of land near Villiers-road for utilisation of land for housing persons de-housed.

KINGSTON-ON-THAMES. — Guildhall.— The Guildhall Sub-Committee of the T.C. are to consider tenders on April 20 for the superstructure of the new Guildhall. The architect is Mr. Maurice E. Webb, F.R.I.B.A., 19, Queen Anne's-gate, S.W.1.

LEYTON.—Alterations.—The architect to the E.C. has submitted plans relating to the reorganisation alterations at Capworth-street and Trumpington-road Schools at estimated costs of £1,365 and £3,100 respectively, and the committee has resolved that the plans be submitted to the B. of E. for approval, subject to which application be made to the M. of H. for sanction to the necessary loan.

MAIDA VALE. — Studio. — The British Broadcasting Corporation, Portland-place, W.1, have accepted the tender of Messrs. Higgs and Hill, Ltd., Crown Works, South Lambeth-road, S.W.8, for the reconstruction of premises at Delaware-road, N.W., as a studio. The work will be under the direction of the chief engineer, Mr. M. T. Tudsbery.

MARYLEBONE-ROAD.—Rebuilding—And extension is to be carried out at the "Globe" public-house, to the plans of Mr. F. J. Wills, F.R.I.B.A., 33, Seymour-street, W.1. The contractors are Messrs. Y. J. Lovell and Son, 6, Bathurst-street, W.2.

MILL HILL.—Shops.—Messrs. Phillips and Cooper, Bentley Priory estate, Church-road, Stanmore, are the contractors for a block of nine shops, with 18 flats above, in Watford By-pass-road and Goodwin-avenue, N.W. The plans have been prepared by Messrs. Hillier, Parker, May & Rowden, 27, Maddox-street.

MILL HILL.—Baths.—The Hendon B.C. have decided to accept the tender of Messrs. Bolton and Lakin, Ltd., 8, Waterloo-street, Birmingham, at £16,255, for the proposed swimming baths, with dressing accommodation for about 600 persons. The plans are by the Borough Surveyor, Mr. A. O. Knight.

NEW ELTHAM.—Pavilion.—Messrs. W. Curtis Green and Partners, 5, Pickering-place, St. James's-street, S.W.1, have prepared plans for the erection of a sports pavilion on the north side of Avery Hill-road, New Eltham, for Charterhouse, Southwark. The building contractors are Messrs. T. Crossley and Son, Bromley, Kent.

PECKHAM.—Premises.—A block of flats is being erected at 87a, Meeting House-lane, by Messrs. Y. J. Lovell and Son, builders, 6, Bathurst-street, W.2, to plans prepared by Messrs. W. H. Woodroffe and Son, architects. Messrs. Young and Co., of 6, Queen Anne's-gate, Westminster, S.W.1, are supplying the constructional steelwork.

PETTS WOOD.—Church.—The tender of Messrs. Hall, Beddall and Co., Ltd., Pitfield-wharf, Waterloo Bridge, S.E.1, has been accepted for the proposed Church of St. Francis, the cost of which is estimated at approximately £10,000. The plans are by Mr. Geoffrey Mullins, F.R.I.B.A., 4a, Bloomsbury-square, W.C.1.

PLUMSTEAD. — Rebuilding. — Mr. J. B. Farrugia, architect, 46, Thomas-street, Woolwich, has submitted plans to the Woolwich B.C., which have been approved, on behalf of Mrs. M. Frosh, for rebuilding 158, Plumstead-road.

RAYNES PARK. — Improvements. — The Wimbledon T.C. has approved the purchase by the Southdown Laundry, Ltd., of a portion of the land at present let to them at the Raynes Park Pumping Station, off Kingston-road, in order to enable them to improve their premises.

ROMFORD.—Rebuilding.—Mr. E. Meredith, F.R.I.B.A., chartered architect, 7, Goodmayes-road, Goodmayes, is the architect for the rebuilding of Messrs. Green's Stores (Ilford), Ltd.'s premises. Messrs. J. Eaton and Sons, of Chelmsford, have secured the building contract at £1,756.

ST. JOHN'S WOOD. — Flats. — Messrs. Morris Estates, Ltd., Dorland-house, Regent-street, W.1, have accepted the tender of Messrs. Henry Kent (Builders), Ltd., 31, Beacon-road, Hither Green, S.E., for their proposed 25 flats in Finchley-road, N.W. The work will be supervised by the company's architect, Mr. H. J. Palmer.

ST. JOHN'S WOOD.—Flats.—Avenue Developments, Ltd., 47, Grosvenor-street, W.1, have acquired the Poplars, Avenue-road, N.W., for the building of a block of residential flats, etc. The contract will be executed by Messrs. Bovis, Ltd., 35, High-street, W.1. The plans are by Messrs. Stanley Hall and Easton and Robertson, FF.R.I.B.A., 54, Bedford-square, W.C.1.

ST. JOHN'S WOOD.—Flats.—Plans have been prepared by Mr. R. J. Hugh Minty, F.R.I.B.A., 3, Great Peter-street, S.W.1, for a proposed block of flats in Albert-road and Eaumont-street, N.W. No contracts let.

SHADWELL.—Dwellings.—The Stepney B.C. has recommended the erection of a block of dwellings upon the site of the Market buildings site.

SHAFTESBURY-AVENUE. — Alterations. —And improvements are to be made to the "George and Dragon" public-house, Shaftesbury-avenue and Wardour-street, W., for Messrs. Levy and Franks, Ltd. The contract has been placed with Mr. S. Lintern, 148, York-road, N.1. The architects are Messrs. Yates, Cook and Darbyshire, 43, Great Marlborough-street, W.1.

SOUTHWARK.—Warehouse. — The contract for the warehouse at Golden Heart-wharf, for Messrs. Cameron Wharf, Ltd., will be carried out by Messrs. Grays Ferro-Concrete, Ltd., 75, Victoria-street, S.W.1. The consulting engineers are Messrs. L. G. Mouchel and Partners, Ltd., 38, Victoria-street, S.W.1.

SOUTHALL. — Shops. — Work has commenced on the erection of eight shops with flats over in the Station-road. The plans have been prepared in the Architects' Department of Messrs. Hillier, Parker, May and Rowden, of Maddox-street, W., and the contractors are Messrs. Charles R. Price, of Bishopsgate, E.C.2.

SPITALFIELDS. — Market. — Mr. Victor Wilkins, F.R.I.B.A., 12, York-buildings, Adelphi, W.C.2, has prepared plans for the City Corporation for the proposed erection of a new flower market. The plans have been submitted to the Stepney B.C. for their consideration.

STEPNEY.—Dwellings.—The B.C. has placed a contract with the Unit Construction Co., Ltd., 1, Robert-street, Adelphi, W.C.2, for the erection of blocks 9 and 10 of the Limehouse Fields site. The plans are by Mr. Bernard J. Belsher, F.R.I.B.A., M.Inst.C.E., Borough Engineer and Surveyor, and the tender price is £13,742.

STEPNEY.—School.—A new school is proposed to be erected by the Managers of St. Patrick's R.C. School on a site in Red Lion-street.

TWICKENHAM. — School. — The School Re-organisation Sub-Committee of the E.C. has given instructions for plans to be prepared in connection with the proposed Kneller school.

WEMBLEY.—School.—The Middlesex E.C. recommend the purchase of land adjoining the playing fields of the Wembley County School for the erection of an elementary school.

WILLESDEN.—Factory. — Messrs. Christopher Dodson and Co. are building a new factory at their premises in Cobbold-road, Willesden. Plans have been prepared by Messrs. Henry Butcher and Co., of Chancery-lane, and the contract has been placed with Messrs. Charles R. Price, of Bishopsgate.

BALLAST, SAND AND ALLIED TRADES

Annual General Meeting.

The fourth annual general meeting of this Association was held at the Hotel Russell, Russell-square, W.C.1, on Thursday, March 22. Mr. F. Wells, Chairman of the Association, presided, supported by Mr. Joseph Sabey, vice-chairman. Among those present were:—A. J. Arnold (Joseph Arnold and Sons), C. S. Bent-Marshall (S. Bent-Marshall), William Boyer (William Boyer and Sons, Ltd.), R. Sanders (Buckland Sand and Silica Co., Ltd.), R. F. Bacon (William Cory and Son, Ltd.), H. W. Cruickshank (Horace A. Cunis, Ltd.), M. W. Hall and H. E. Peirce (Hall and Co., Ltd.), B. H. Marriage (Geo. T. Hall, Ltd.), W. D. Hall of Wimbledon Park, H. E. Ford (Ham River Grit Co., Ltd.), E. R. Cole, T. G. S. Hall and F. E. Storton (Heathrow Sand and Gravel (Colnbrook), Ltd., C. A. Nichols (Hythe End Aggregates, Ltd.), B. Mott (Land Gravel Co., Ltd.), T. Lavender (H. Lavender and Son), J. E. Lavender of Brentwood, W. J. Lavender (W. J. Lavender, Ltd.), W. A. Batterson (Ebenezer Mears and Son), A. Franks (Newbury Park Sand, Ballast and Builders' Merchants, Ltd.), Joseph A. Patterson (Thomas Patterson and Son, Ltd.), H. J. Constable (J. J. Prior, Ltd.), L. S. Ornsby, Senr. and Jnr. (E. Reddin and Co.), W. H. Wild (Rickmansworth Gravel Co., Ltd.), J. F. Barham (Romford Field Sand and Ballast Pits), A. G. Coward (Rom River Sand and Gravel Pits), Joseph Sabey (H. Sabey and Co., Ltd.), A. D. Berk (St. Albans Sand and Gravel Co., Ltd.), A. Saunders (A. Saunders and Son), G. W. Rowe (Stone Court Ballast Co., Ltd.), Frank Williams (Twickenham Gravel Co., Ltd.), J. H. Wallis of Ruislip, F. Wells (Wraysbury Sand and Gravel Co., Ltd.), A. H. Smith (Holmon Bros., Ltd.), H. R. Lewis (E. F. Sergeant), J. F. Churchill (John I. Thornycroft and Co., Ltd.), S. H. Hawes (Universal Power Drives, Ltd.), R. Gusley and E. H. Wootton (Weymann's Motor Bodies (1925), Ltd.), and T. W. Tanton (Wrights' Ropes, Ltd.).

The Chairman read the annual report, in which it was stated that for the year ended December 31, 1933, 1,044 loading line plates nd 230,000 delivery tickets had been issued o members, making totals respectively of 4,999 and 820,500 since the Association was formed. The encouragement, he continued, which had been given to certain merchants to sell more than was paid for by pits who promised overloads had enabled that very unwholesome system of trading to continue. It was doubtful, however, whether the so-called overloads were in many cases as apparent as the merchant would have the consumer believe. Many of the old ideas and methods of trading were happily becoming obsolete, and the only hope of a return to a continuance of better conditions was for the general adoption of a standard of measurement in conjunction with sound economic principles in business. Since the half-yearly meeting was held, the recommendations from the British Standards Institution in connection with the standardisation of the cubic yard and the system of selling and carrying materials had been sent to the Board of Trade, and were now receiving consideration, preparatory, it was hoped, to the introduction of a Bill in the House of Commons.

Following on the recommendation of the special general meeting, the Central Committee had considered it advisable to take notice of the request of many producers that a pit-owners' section should be formed. Had the consumers given the Association the support it could reasonably have expected, the question of a section of this nature might not have been necessary, as it was conceivable that the loading line and delivery ticket system, operated generally, would have had the effect of placing the industry in a condition which would have been satisfactory from the points of view of all concerned—producers, distributors, and consumers, and that grossly unfair competition, which now obtained, would long ago have been eliminated.

Mr. Joseph Sabey moved the adoption of the report and accounts, which motion was seconded by Mr. W. A. Batterson, and carried unanimously.

It was unanimously agreed that a pit-owners' section should be formed, and that the whole of the known pit-owners, members and non-members, in the Home Counties should be invited to attend a general meeting.

The chairman said that he very much regretted that he was unable to continue on the Central Committee, and that therefore he could not continue as chairman of the Association.

The following were elected new members of the Central Committee:—Mr. H. W. Cruickshank (Horace A. Cunis, Ltd.), Mr. Joseph A. Patterson (Thomas Patterson and Son, Ltd.), and Mr. G. W. Rowe (Stone Court Ballast Co., Ltd.).

The following were re-elected:—Mr. R. F. Bacon (Wm. Cory and Son, Ltd.), Mr. W. A. Batterson (Ebenezer Mears and Son), Mr. Wm. Boyer (Wm. Boyer and Sons, Ltd.), Mr. H. E. Ford (Ham River Grit Co., Ltd.), Mr. Ernest Knifton (Ernest Knifton, Ltd.), and Mr. H. E. Peirce (Hall and Co., Ltd.).

The following serve for another year without re-election, according to the constitution of the Association:—Mr. A. J. Arnold (Joseph Arnold and Sons), Mr. A. D. Berk (St. Albans Sand and Gravel Co., Ltd.), Mr. R. S. Brewis (Brillma, Ltd.), Mr. E. S. Clifford (Cliffords (Fulham), Ltd.), Major A. G. Coward (Rom River Sand and Gravel Pits), Mr. Joseph Sabey (H. Sabey and Co., Ltd.), and Mr. A. F. Shaw (Merton Engineering Co., Ltd.).

Mr. A. J. Arnold was unanimously elected chairman, and Mr. Joseph Sabey was unanimously re-elected vice-chairman.

A hearty vote of thanks was accorded Mr. Wells for his services to the Association.

NEW CINEMAS

CANVEY ISLAND.—Mr. A. E. Abrahams, 25, Shaftesbury-avenue, W.1, is negotiating for a site for a super cinema. No plans prepared yet.

CHINGFORD.—The Odeon Circuit, Cornhill House, Bennett's Hill, Birmingham, are to erect a cinema on a central site. Plans will be prepared by Mr. Andrew Mather, F.I.A.A., L.R.I.B.A., Leicester Square-chambers, W.C.2. No contracts have been placed.

GLASGOW.—Extensions are to be made to the Moss Park Picture House. Plans have been approved by the Corporation.

FAVERSHAM (KENT).—A plan is on hand to erect a cinema at the rear of the Elizabethan house in Market-place.

HARROW-ROAD.—A contract for the rebuilding of the Prince of Wales Cinema, 331, Harrow-road, W.9, for Modern Cinemas, Ltd., has been placed with Messrs. W. F. Blay, Ltd., Dowgate-hill, E.C. Plans are by Messrs. Stanley Beard and Clare, F. and A.R.I.B.A., 101, Baker-street, W.1.

LEEDS.—Mr. C. Armitage, Cabinet Chambers, Basinghall-street, Leeds, is architect for the proposed cinema in Lower Wortley-road. The promoter is Mr. Arthur Wilkinson, Allerton Hall, Chapel Allerton.

OXFORD-STREET.—Mr. D. J. James, Wharf House, Malt-street, S.E.1, has acquired Cinema House, No. 225, and will carry out an extensive scheme of reconstruction, including new façade, entrance hall, offices, etc. Plans are being prepared by Messrs. Leslie H. Kemp and Tasker, 10, Great James-street, W.C.1.

WATERLOO.—A contract for the erection of the news cinema at Waterloo Station, to seat 250 persons, has been placed with Messrs. F. G. Minter, Ltd., Ferry Works, Putney, S.W. Plans have been prepared by Mr. Alister G. MacDonald, A.R.I.B.A., 13, Queen Anne's-gate, S.W.1. The promoters are British News Theatres, Ltd., 172, Buckingham Palace-road, S.W.1.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1934.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberdare	1/5	1/0½
Abergavenny	1/5	1/0½
Aberystwyth	1/2	10½
Accrington	1/5½	1/1½
Aldeburgh	1/1½	10½
Aldershot	1/2½	11
Alfreton	1/5½	1/1½
Alnwick	1/4½	1/0½
Altrincham	1/5½	1/1½
Amble	1/4½	1/0½
Amersham	1/3½	11½
Ammanford	1/5½	1/1½
Andover	1/2½	11
Arundel	1/2½	11
Ascot	1/3½	11½
Ashby-de-la-Zouch	1/4	1/-
Ashford (Kent)	1/2½	11
Ashford (Middx.)	1/4	1/-
Ashington	1/4½	1/0½
Ashtead	1/4	1/-
Ashton-under-Lyne	1/5½	1/1½
Aylesbury	1/2½	11
Aylsham	1/2	10½
Bagshot	1/2½	11
Banbury	1/3	11½
Barnsley	1/5½	1/1½
Barnstaple	1/3½	11½
Barrow-in-Furness	1/5½	1/1½
Barry	1/5½	1/1½
Basingstoke	1/3	11½
Bath	1/4½	1/0½
Batley	1/5½	1/1½
Beaconsfield	1/3½	11½
Beccles	1/2	10½
Bedford	1/4½	1/0½
Berkhamsted	1/3	11½
Berwick	1/4½	1/0½
Beverley	1/5½	1/1½
Bexhill	1/3	11½
Bideford	1/3½	11½
Biggleswade	1/3	11½
Billericay	1/2	10½
Birchington	1/3	11½
Birkenhead	1/7†	1/2½
Birmingham	1/5½	1/1½
Bishop Auckland	1/5	1/0½
Bishops Stortford	1/3	11½
Blackburn	1/5½	1/1½
Blackpool	1/5½	1/1½
Blyth	1/5½	1/1½
Bognor Regis	1/3	11½
Bolton	1/5½	1/1½
Bournemouth	1/4	1/-
Bracknell	1/3	11½
Bradford	1/5½	1/1½
Bradford-on-Avon	1/2½*	11
Braintree	1/3½	11½
Brentwood	1/5	1/0½
Bridgwater	1/3	11½
Bridlington	1/5	1/0½
Brighouse	1/5½	1/1½
Brighton	1/4	1/-
Bristol	1/5½	1/1½
Broadstairs	1/3	11½
Bromsgrove	1/4½	1/0½
Bromyard	1/2	10½
Buckley	1/5½	1/1½
Bungay	1/1½	10½
Burnham-on-Crouch	1/2	10½
Burnley	1/5½	1/1½
Burslem	1/5½	1/1½
Burton-on-Trent	1/5½	1/1½
Bury	1/5½	1/1½
Bury St. Edmunds	1/2½	11
Buxton	1/5	1/0½
Byfleet	1/3	11½
Cambridge	1/5	1/0½
Canterbury	1/3	11½
Cardiff	1/5½	1/1½
Carlisle	1/5½	1/1½
Carnforth	1/5½	1/1½
Castleford	1/5½	1/1½
Caterham	1/4	1/-
Chard	1/2*	10½
Chatham	1/3½	11½
Chelmsford	1/4	1/-
Cheltenham	1/4	1/-
Chepstow	1/4½	1/0½
Chertsey	1/4	1/-
Chester	1/5½	1/1½
Chesterfield	1/5½	1/1½
Chichester	1/3	11½
Chorley	1/5½	1/1½
Cirencester	1/3*	11½
Clacton	1/3½	11½
Cleveleys	1/5½	1/1½
Clitheroe	1/5½	1/1½
Cobham	1/4	1/-
Colchester	1/4	1/-
Colwyn Bay	1/4½	1/0½
Congleton	1/5	1/0½
Coventry	1/5½	1/1½
Cranbrook	1/2	10½
Cranleigh	1/2½	11
Crawley	1/3	11½
Crewe	1/4½	1/0½
Cromer	1/2½	11
Crowborough	1/3	11½
Cuckfield	1/3	11½
Darlington	1/5½	1/1½
Darwen	1/5½	1/1½
Daventry	1/4	1/-
Deal	1/3	11½
Denbigh	1/4	1/-
Derby	1/5½	1/1½
Devizes	1/2*	10½
Dewsbury	1/5½	1/1½
Didcot	1/3½	11½
Diss	1/2	10½
Doncaster	1/5½	1/1½
Dorchester	1/2½*	11
Dorking	1/3	11½
Dover	1/3	11½
Dovercourt	1/3½	11½
Driffield	1/4	1/-
Droitwich	1/4½	1/0½
Dudley	1/5½	1/1½
Dunstable	1/2	10½
Durham	1/5½	1/1½
Eastbourne	1/4	1/-
E. Glam. (Mon. Val.)	1/5	1/0½
East Grinstead	1/3	11½
Edenbridge	1/3	11½
Ely	1/2	10½
Epping	1/4½	1/0½
Exeter	1/4½†	1/0½
Exmouth	1/3½	11½
Fakenham	1/2	10½
Falmouth	1/3½	11½
Fareham	1/3	11½
Faversham	1/2½	11
Felixstowe	1/4	1/-
Filey	1/4	1/-
Fleetwood	1/5½	1/1½
Flint	1/5	1/0½
Folkestone	1/3	11½
Frinton-on-Sea	1/3½	11½
Frome	1/2½*	11
Gainsborough	1/4½	1/0½
Gateshead	1/5½	1/1½
Gillingham	1/3½	11½
Glossop	1/5	1/1½
Gloucester	1/4½†	1/0½
Godalming	1/3½	11½
Goole	1/4½	1/0½
Gosport	1/4½	1/0½
Grantham	1/4	1/-
Gravesend	1/5	1/0½
Gt. Yarmouth	1/3	11½
Grimsby	1/5½	1/1½
Guildford	1/3½	11½
Guilsborough	1/4	1/-
Halifax	1/5½	1/1½
Hanley	1/5½	1/1½
Harpenden	1/3	11½
Harrogate	1/5½	1/1½
Hartlepools	1/5½	1/1½
Harwich	1/3½	11½
Haslemere	1/2½	11
Hastings	1/3	11½
Hatfield	1/4½	1/0½
Haywards Heath	1/3	11½
Hednesford	1/5	1/0½
Hemel Hempstead	1/4	1/0
Henley	1/3½	11½
Hereford	1/3½*	11½
Herne Bay	1/3	11½
Hertford	1/4½	1/0½
Heysham	1/5½	1/1½
Hitchin	1/3½	11½
Hoddesdon	1/4½	1/0½
Holt	1/1½	10½
Horley	1/3	11½
Horsham	1/2½	11
Horwich	1/5½	1/1½
Huddersfield	1/5½	1/1½
Hull	1/5½	1/1½
Hunstanton	1/2	10½
Huntington	1/2½	11
Ilfracombe	1/3½	11½
Ingatestone	1/3	11½
Ipswich	1/4½	1/0½
Isle of Thanet	1/3	11½
Isle of Wight	1/2	10½
Keighley	1/5½	1/1½
Kenilworth	1/5½	1/1½
Kettering	1/4½	1/0½
Kidderminster	1/4½	1/0½
King's Lynn	1/3	11½
Kirkham	1/5½	1/1½
Knowle	1/5	1/0½
Lancaster	1/5½	1/1½
Leamington	1/5	1/0½
Leatherhead	1/4	1/-
Leeds	1/5½	1/1½
Leicester	1/5½	1/1½
Leighton Buzzard	1/2	10½
Letchworth	1/3½	11½
Lewes	1/2	10½
Lichfield	1/4½	1/0½
Lincoln	1/5½	1/1½
Littlehampton	1/3	11½
Liverpool	1/7‡	1/2½
Llandudno	1/4½	1/0½
Llanelly	1/5½	1/1½
London—		
12 m. radius	1/7*	1/2½
12-15 m. radius	1/6½*	1/2
Long Eaton	1/5½	1/1½
Longton	1/5½	1/1½
Loughborough	1/5½	1/1½
Louth	1/4	1/-
Lowestoft	1/3	11½
Luton	1/4	1/-
Macclesfield	1/5	1/0½
Maidenhead	1/4	1/-
Maidstone	1/3½	11½
Malvern	1/4	1/-
Manchester	1/5½	1/1½
Manningtree	1/2	10½
Mansfield	1/5½	1/1½
March	1/2	10½
Margate	1/3	11½
Market Harborough	1/4½	1/0½
Matlock	1/4	1/-
Melton Constable	1/1½	10½
Melton Mowbray	1/4½	1/0½
Merthyr Tydfil	1/5	1/0½
Middlesbrough	1/5½	1/1½
Middleton	1/5½	1/1½
Middlewich	1/4½	1/0½
Milford Haven	1/3½	11½
Morecambe	1/5½	1/1½
Morley	1/5½	1/1½
Mundesley	1/2	10½
Nantwich	1/4½	1/0½
Newark	1/4½	1/0½
Newbury	1/2½	11
Newcastle-on-Tyne	1/5½	1/1½
Newcastle-u-Lyme	1/5½	1/1½
New Forest	1/2½	11
Newmarket	1/3	11½
Newport, Mon.	1/5½	1/1½
Newport Pagnell	1/2½	11
Northampton	1/5½	1/1½
Norwich	1/5	1/0½
Nottingham	1/5½	1/1½
Nuneaton	1/5½	1/1½
Oakham	1/4	1/-
Oldham	1/5½	1/1½
Ormskirk	1/5½	1/1½
Oxford	1/4½	1/0½
Oxted	1/2½	11
Paignton	1/4½	1-0½
Peterborough	1/4½	1/0½
Plymouth	1/5½†	1/1½
Pontypridd	1/5	1/0½
Portsmouth	1/4½	1/0½
Port Talbot	1/5½	1/1½
Preston	1/5½	1/1½
Pulborough	1/2	10½
Ramsgate	1/3	11½
Reading	1/4½	1/0½
Redcar	1/5½	1/1½
Redditch	1/4½	1/0½
Redhill	1/3½	11½
Reigate	1/3½	11½
Retford	1/4	1/-
Ripon	1/4	1/-
Rochdale	1/5½	1/1½
Rochester	1/3½	11½
Rugby	1/5½	1/1½
Saffron Walden	1/2	10½
St. Albans	1/5	1/0½
St. Helens	1/5½	1/1½
St. Neots	1/2½	11
Salisbury	1/2½*	11
Salisbury Plain	1/2½*	11
Sawbridgeworth	1/3½	11½
Saxmundham	1/1½	10½
Scarborough	1/5	1/0½
Selby	1/5½	1/1½
Sevenoaks	1/3½	11½
Sheerness	1/3	11½
Sheffield	1/5½	1/1½
Shipley	1/5½	1/1½
Shoeburyness	1/4½	1/0½
Shoreham	1/4	1/-
Shrewsbury	1/4½	1/0½
Sittingbourne	1/2½	11
Skegness	1/4½	1/0½
Sleaford	1/4	1/-
Slough	1/4½	1/0½
Southampton	1/4½	1/0½
Southend-on-Sea	1/4½	1/0½
Southport	1/5½	1/1½
South Shields	1/5½	1/1½
Spalding	1/3	11½
Stafford	1/5	1/0½
Staines	1/4	1/-
Stamford	1/4	1/-
Stevenage	1/3½	11½
Stockport	1/5½	1/1½
Stockton-on-Tees	1/5½	1/1½
Stoke-on-Trent	1/5½	1/1½
Stourbridge	1/5	1/0½
Stourport	1/4½	1/0½
Stowmarket	1/2	10½
Stratford-on-Avon	1/4	1/-
Stroud	1/3½†	11½
Sunderland	1/5½	1/1½
Sutton Coldfield	1/5½	1/1½
Swaffham	1/1½	10½
Swanage	1/3½*	11½
Swansea	1/5½	1/1½
Swindon	1/4*	1/-
Tamworth	1/5	1/0½
Taunton	1/3½	11½
Tenterden	1/2½	11
Tewkesbury	1/4*	1/-
Thetford	1/2	10½
Thorpe Bay	1/4½	1/0½
Todmorden	1/5½	1/1½
Tonbridge	1/3½	11½
Torquay	1/5	1/0½
Totnes	1/3½†	11½
Trowbridge	1/2½*	11
Truro	1/2½	11
Tunbridge Wells	1/3½	11½
Uppingham	1/4	1/-
Uttoxeter	1/3½	11½
Wakefield	1/5½	1/1½
Walsall	1/5½	1/1½
Walsden	1/5½	1/1½
Walton-on-Naze	1/3½	11½
Ware	1/4½	1/0½
Warminster	1/2½*	11
Warrington	1/5½	1/1½
Warwick	1/5	1/0½
Wellingborough	1/4½	1/0½
Wells (Norfolk)	1/1½	10½
Welwyn	1/3	11½
Welwyn Gar. City	1/5½	1/1½
West Bromwich	1/5½	1/1½
Westcliff-on-Sea	1/4½	1/0½
Weston-super-Mare	1/4½	1/0½
Weybridge	1/4	1/-
Weymouth	1/3*	11½
Whitby	1/4½	1/0½
Whitstable	1/3	11½
Widnes	1/5½	1/1½
Wigan	1/5½	1/1½
Wigton	1/4	1/-
Wellington	1/5	1/0½
Wilmslow	1/5½	1/1½
Winchester	1/3½	11½
Windermere	1/3½	11½
Windsor	1/4½	1/0½
Wisbech	1/2	10½
Witham	1/3½	11½
Woking	1/3½	11½
Wokingham	1/3½	11½
Wolverhampton	1/5½	1/1½
Woodbridge	1/2	10½
Worcester	1/4½	1/0½
Workington	1/4	1/-
Worksop	1/4	1/-
Worthing	1/3	11½
Wrexham	1/5	1/0½
Wroxham	1/2½	11
Wycombe	1/4	1/-
Wymondham	1/1½	10½
Yeovil	1/3*	11½
York	1/5½	1/1½

* Painters, 1d. less than other Craftsmen. † Painters, ½d. less than other Craftsmen. ‡ Plasterers 1s. 8d.

For Building Trade Wages in Scotland, see page 610.

CONTRACTS OPEN

For some contracts still open, but not included in this List, see previous issue. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

APRIL 9.

Barking.—Houses.—On Movers-lane estate, for B.C. C. J. Dawson, Son & Allardyce, architects, Clock House-chambs. Dep. £5.

Basford.—Painting.—Internal and external painting and decorating of Rock House and premises, for R.D.C. S. Maylan, E. and S. Dep. £1 1s.

Blackpool.—Walls.—Palisade walls to houses on St. John's estate in Condor-grove, for T.C. H. Blanks, Acting B.E. and S.

Camborne.—Bungalow.—At Penponds Viaduct, for W. H. Eva.

Castleford. — Shelters. — And conveniences at Smawthorne-lane recreation ground and Queen's Park, for U.D.C. C. R. Smith, S. Dep. £2 2s.

Chelmsford.—Pumping Station.—And other works, for Joint Sewerage Committee. B.S., Chelmsford. Dep. £5.

Croydon.—Houses.—At Stam Farm estate, for C.B. B.E. Dep. £3 3s.

Falmouth.—Houses.—84, at the Beacon, for T.C. H. E. Tresidder, B.S. Dep. £2 2s.

London.—Walls.—Concrete retaining walls and other appurtenant works at recreation ground site, Dalgarno-gardens, North Kensington, for Kensington B.C. B.E. and S.

Markinch.—Houses.—24, at Croft site, in various trades, for T.C. A. D. Haxton, architect, Commercial-rd., Leven.

Monmouth.—Alterations.—To Butter Market, for T.C. W. J. H. Biddle, B.S., 3, St. James-st. Dep. £2.

Musselburgh — Alterations. — And additions at Newbigging Public School, for Midlothian C.C. County Architect, 10, Drumsheugh-gdns., Edinburgh, 3.

New Malden.—Extensions.—To fire station, Malden-rd., for Maldens and Coombe U.D.C. E. and S.

Pontypool.—Houses.—6, for U.D.C. Lougher & Co., architects, Bank-chmbrs.

Reading.—Painting.—And decorating of 98 houses, on various estates, for T.C. Housing Architect, St. Laurence's Churchyard, Reading.

Upton.—Painting.—And decorating at police station, for West Riding Police Authority. West Riding Architect, Wakefield.

Wakefield.—Alterations.—To printing shop at Constabulary Headquarters, for West Riding Police Authority. West Riding Architect, Wakefield.

***Warwick.**—Erection.—Of one cottage and one set of farm buildings at Warmington, for County of Warwick. A. C. Bunch, County Architect. Dep. £2 2s.

APRIL 10.

Arbroath.—Painting.—Eight blocks each consisting of eight 3-apartment houses, at Brechin and Montrose-rds. site, for T.C. B.E. Dep. £1.

Bangor.—Garage.—For H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Doncaster.—Cowhouse.—At Loversall Estate, for West Riding C.C. County Land Agent, Wakefield.

Edinburgh.—Demolition.—Of two brick chimneys at Westbank, Portobello, for T.C. City E., 14, Cockburn-st.

Morley.—Science Block.—At Victoria-rd. elementary school, for T.C. F. Turner, B.Sc., A.M.I.C.E., B.E. and S. Dep. £2 2s

Near Warwick.—Additions.—And extensions to King Edward VII Memorial sanatorium, Hertford Hill, for Warwickshire and Coventry Joint Committee for Tuberculosis. A. C. Bunch, architect. Shire Hall, Warwick. Dep. £2 2s.

Nottingham.—School.—On Colwick Hill housing estate, Hereford-rd., for E.C. T. Wallis Gordan, City E. and S. Dep. £2.

Prescot—Conveniences.—On recreation ground nr. Eaton-st. and at Grosvenor-rd., for U.D.C. F. A. Gregson, S., 2, West-st. Dep. £1.

Runcorn.—Houses.—4 non-parlour type in Pump-lane and Main-st., Halton, and 8 non-parlour type in Ellis-lane, Frodsham, for R.D.C. J. O. Hunter, Castle Park, Frodsham, via Warrington. Dep. £2 2s.

Swadlincote.—Interior Decoration.—Of 32 houses at George-st. and Hall-st., Church Gresley, for U.D.C. G. A. Taylor, E. and S.

Widnes.—Houses.—On Moor-lane site, for T.C. B. Eng. Dep. £2 2s.

Willenhall.—Houses.—74, on Bilston-lane site, for U.D.C. G. A. Waite, Assoc.M.Inst., C.E. Dep. £2 2s.

APRIL 11.

Aberporth.—Houses.—Pair of semi-detached, for D. T. Evans, Ffynonwen, Aberporth. L. W. H. Williams, architect, 45, High-st., Cardigan. Dep. £1 1s.

Brighton.—Erection.—Of public hall in Lewes-rd., Moulsecomb, for C.B. Jas. H. Rothwell, T.C. Dep. £2 2s

Dunbar.—Houses.—10, in Victoria-st., for T.C. Kininmonth & Spence, architects, 16, Rutland-sq., Edinburgh. Dep. £1.

Harrogate.—Painting.—Isolation Hospital, Thistle Hill, Knaresborough, and Small Pox Hospital, Killinghall Moor, for Harrogate, Knaresborough and Wetherby Joint Isolation Hospital Committee. C. E. Rivers, B.E.

Perth.—Plumber Work.—For meter repairing shop, workshop, stores and garage, at gas works, Friarton, for T.C. D. Vass, Engineer and Manager.

Swadlincote.—Shops.—At Gasworks, Belmont-st., for U.D.C. G. A. Taylor, E. and S.

Wallasey.—Conveniences.—In car park building, Seacombe Ferry, for T.C. B.E. Dep. £1 1s.

Worthing.—Extensions.—At rear of Museum and Art Gallery. Chapel-rd., for T.C. B.E. and S.

Worthing.—Library.—Dominion-rd., for T.C. B.E. and S.

APRIL 12.

Derby.—Houses.—On Normanton site, for C.B. C. H. Aslin, F.R.I.B.A., Borough Architect. Dep. £1 1s.

Dudley.—Painting.—Outside to 125 houses at Bowling Green estate, Netherton, and 28 at Red Hill estate, for T.C. Housing Manager, Holloway-chambs., Priory-st.

Dundee.—Steelwork.—For locomotive house at generating station, Carolina Port, for T.C. D. H. Bishop, General Manager and Engineer, Dudhope-Crescent-rd.

Kingston-upon-Hull.—Pavilion.—For 38 beds and additions to administration block, including drainage, etc., at Tuberculosis Sanatorium, Cottingham, for T.C. D. Harvey, A.R.I.B.A., City Architect. Dep. £1 1s.

Liverpool.—Erection.—Of Walton employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

London.—Repairs.—To Roman Catholic Chapel, St. Pancras Cemetery, East Finchley; to "Hawthorndene," Strawberry Vale, East Finchley; to Viaduct Bridge, St. Pancras Cemetery, East Finchley, for St. Pancras B.C. A. Powell Coke, T.C.

Scunthorpe.—Extensions.—At Trinity Methodist Church. W. H. Buttrick, chartered architect, 43, Oswald-rd.

Swansea.—House.—New transformer house at North Dock, for G.W.R. Resident Docks Engineer, Swansea Docks. Dep. £2 2s.

Torpoint.—Alterations.—Adaptations and additions to Methodist Church, Buller-rd., for Council offices, and for public conveniences, for U.D.C. G. Rodley, E. and S. Dep. £2 2s.

Torpoint.—Heating.—Installation of central heating of sufficient capacity to heat the Methodist Church in Buller-rd., for U.D.C. G. Rodley, E. and S. Dep. £1 1s.

APRIL 13.

Bury St. Edmund's.—Houses.—40 non-parlour type on Prior's-rd. housing site, for T.C. R. H. Beaumont, B.S. Dep. £2 2s.

Crediton.—Painting.—Interiors of 6 Council houses at Lapford, for R.D.C. E. Chell, Sanitary Surveyor, Tors View, Barnstaple Cross.

Dundee. — Installation. — Of cold storage at slaughter house, for T.C. City Quantity S., 21, City-sq. City Architect.

Glengormley.—School.—Public elementary school at Glengormley, Co. Antrim, for Lisburn and Belfast Regional E.C. R. Ferguson, architect (of R. Ferguson & S. M'Ilveen), 36, Scottish Provident-buildings, Belfast. Dep. £2 2s.

Sanquhar.—Houses.—28, for T.C. W. Scott, architect, Sanquhar.

APRIL 14.

Dunstable.—135 Houses.—With roads and sewers, on North Field housing estate, for Borough. T. Alwyn Lloyd. Dep. £3 3s.

Durham.—Painting.—Of police stations and houses in district, for C.C. W. J. Merrett, C.E., S. and Architect, Durham.

Hoyland.—Rebuilding.—Of offices and other works, at council school, for West Riding C.C. A. Rayner, 151, Cross Hill, Ecclesfield, Sheffield.

Keighley.—Painting.—100 houses, Broomhill estate, 85 houses and 4 flats, Guard House estate, for T.C. E. G. Feigate, A.R.I.B.A., Borough Architect. Dept. £1.

Kirkcaldy.—Alterations.—At Abden Home, for T.C. B.S.

Kirkcudbright.—Houses.—7 blocks at Millflats in various trades, for T.C. John Gibson, T.C. Dep. £1 1s.

Royston.—Garage.—For public ambulance, for U.D.C. Wm. Parks, Sanitary Inspector. Dep. £1 1s.

Southend.—Wiring.—Of 122 houses for lighting and domestic power on Eastwood-lane housing estate, for T.C. Borough Electrical Engineer.

Thurnscoe.—Installation.—Of electric light at council school, for West Riding C.C. W. H. Jones, Divisional Clerk, Education Office, Mexborough.

APRIL 16.

Ardrossan.—Houses.—84, at Barrie Terrace, for T.C. Black & Shapley, architects, 15, Barr-st. Dep. £1 1s.

Biggleswade.—Painting.—External re-painting of 74 houses, for U.D.C. J. R. Oxenham, S.

Beotle. — Demolition. — Of 6 greenhouses and construction, erection and completion of 5 new greenhouses in Derby Park, for C.B. Borough Engineer, Town Hall.

Chelmsford.—Cottages.—4 pairs of cottages and construction of new road, 120 ft. in length, in Rectory-rd., Writtle, for R.D.C. T. T. Thomas, E. and S. Dep. £1 1s.

Chester.—Extension.—Of Nurses' Home, at Royal Infirmary. Douglas Minshull & Williams, L.R.I.B.A., 6, Abbey-sq. Dep. £2 2s.

***Halifax.**—Alterations.—And additions to County Court, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

***Kensington, S.W.7.**—Erection.—Of extension to Spirit Building, Natural History Museum, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, S.W.1. Dep. £1.

Leeds.—External Painting.—Of several buildings at Menston Mental Hospital, for West Riding Mental Hospitals Board. W. E. H. Burton, Assoc.M.Inst.C.E., architect and engineer, Wakefield.

London. — Painting. — Internal and decorating works at Newlands and Sunray housing estates, for Camberwell B.C. W. Bell, B.E. and S.

London. — Internal. — And external cleansing, painting and repairs at North-Eastern Hospital, for L.C.C. Chief Engineer, (A), County Hall, Westminster Bridge, S.E.1. Dep. £1.

Macclesfield. — Dwellings. — 116, on Moss-lane Housing Estate, for T.C. Edward Hamson, architect, Town Hall. Dep. £2.

Wakefield. — Houses. — 74, on various sites, for R.D.C. W. E. Massie, E. and S.

APRIL 17.

***Barnsley.**—Alterations.—And additions to employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Belfast.—Installations.—Central heating installation; electric lighting installation, etc.; installing electric passenger lift at new Maternity Gynæcological Hospital Infirmary, for B.G. F. W. Parkinson, M.I.E.E.. Dep. £2 2s.

Birkenhead.—Painting, etc.—Exterior of electricity offices and works. Bentinck-st., for T.C. B. Robinson, B.E.

Bray.—Houses.—274, Oldcourt scheme, for U.D.C. S. MacCathmhaoil, clerk.

Castlebar.—Installation.—Of heating, steam and hot-water services, at Mental Hospital, for Committee. P. J. Munders, 1, South Frederick-st., Dublin. Dep. £10.

Castletown Berehaven.—School.—For County Cork Vocational Education Committee. D. J. Tierney, architect, 85, South Mall, Cork. Dep. £5 5s.

Chingford.—Extensions.—To senior school, for Essex C.C. J. Stuart, F.R.I.B.A., County Architect, Chelmsford. Dep. £2 2s.

Hayfield.—Alterations.—To kitchen at Poor Law Institution, for Derbyshire Public Assistance Committee. County Architect, Derby. Dep. £2 2s.

APRIL 18.

Brighouse.—Houses.—20, and 8 bungalows, at Crowtrees-lane, Rastrick, for T.C. B.E. Dep. £1 1s.

Doncaster.—Painting.—External of 60 houses at Barnby Dun, and 32 at Armthorpe, for R.D.C. J. A. Williams, S.

Troon.—Houses.—20, in Gillies-st., for T.C. B.S. Dep. £1 1s.

Ventnor.—Building.—Hospital block, etc., Isolation Hospital, Upper Ventnor, for U.D.C. Surveyor's Office, St. John's House, Albert-st.

APRIL 19.

Glasgow.—Centre.—Police training centre, Nicholson and Oxford-sts., for T.C. D. Stenhouse, T.C.

***Richmond, Surrey.**—Demolition.—Of 41 cottages on site adjoining Lower Mortlake-rd., for Borough Council. Borough Engineer, Hotham House, Heron Court. Dep. £1 1s.

APRIL 20.

Durham.—Demolition.—And rebuilding house block at Poor Law Institution, for C.C. W. J. Merrett, C.E. and S., 20, Old Elvet, Durham.

Mayo.—Hospitals.—At Ballina, Belmullet, Claremorris and Swinford, for Board of Health and Public Assistance. Morris & Kavanagh, 68, Harcourt-st., Dublin.

APRIL 21.

Fenny Compton.—Alterations.—To shop premises for Fenny Compton Co-operative Society, Ltd. Managing Secretary.

Ilkley.—Open-air Swimming Pool.—For U.D.C. A. Skinner, Surveyor and Water Engineer. Dep. £2 2s.

Isle of Thanet.—Shelters.—At Minnis Bay, Birchington, for R.D.C. C. Taylor, clerk, Council Offices, Hill House, Minster, near Ramsgate.

Malvern.—Houses.—10, at Poolbrook, Great Malvern, for U.D.C. W. O. Thorp, S. Dep. £1 1s.

Mansfield Woodhouse.—Houses.—44, at Oxclose-lane housing estate, for U.D.C. Lawrence Walker, M.Inst.M. and Cy.E., S. Dep. £2 2s.

APRIL 23.

***Barking.**—Construction.—Of about 2,200 yd. lin. of stoneware and concrete pipe sewers. Also for construction of house and gully connections, etc., for B.C. W. H. Radford & Sons, engineer, Albion-chams., King-st., Nottingham. Dep. £3 3s.

Dunfermline.—Houses.—44, at Baldbridgeburn, for T.C. D. H. Shaw, B.E. Dep. £1 1s.

Ilkeston.—Houses.—66, at Albany-st. and Nottingham-rd. housing estate, for T.C. B.E.

London.—Alterations.—To navigation lights on various bridges, for L.C.C. Clerk, County Hall, S.E.1. Dep. £2.

***Manchester.**—181 Flats, 2 Lock-up Shops and a Public Hall and Clubroom.—At Smedley Point, Cheetham, for T.C. Housing Director, Town Hall. Dep. £2 2s.

Newton Abbot. — Wiring.—Hospital buildings, Totnes-rd., for Newton Abbot Joint Hospital Committee. A. P. Copplestone, clerk to the Committee, "Woodgarth," 25, Garston-av.

APRIL 24.

***Maidstone.**—Houses.—90, on Ringlestone estate for T.C. Town Clerk, 13, Tonbridge-rd.

APRIL 25.

Enniskillen.—Alterations.—Of model P.E. school, for Fermanagh Regional E.C. J. J. M'Guire, Secretary, Courthouse, Enniskillen. Dep. £2 2s.

***Southampton.**—Erection.—Of police station at Fleet, for C.C. Clerk, Winchester. Dep. £1 1s.

APRIL 30.

***Chester.**—Hot-Water Heating, etc.—At proposed Lache Junior School, for City and County of the City of Chester. Chas. Greenwood, Ctiy E.

MAY 5.

Limerick.—Alterations.—And extensions to existing buildings, new Isolation Hospital, shelter, etc., at Limerick Mental Hospital. Sheahan & Clery, architects and engineers, 47, O'Donnell-st.

***Shawbury (Shropshire).**—Erection.—Of casual wards, for Salop C.C. A. G. Chant, County Architect, 5, Belmont, Shrewsbury. Dep. £2 2s.

NO DATE.

Ballachulish.—Houses.—50, in various trades, for Argyll C.C. C.E., County Offices, Lochgilphead. Dep. £1 1s.

Branscombe.—Flat.—And garages. J. Ford, A.R.I.B.A., architect and surveyor, Seaton.

Bury St. Edmunds.—Structural Alterations—To 19-20, Brentgrove-st., for Industrial Co-operative Provision Society, Ltd., 3, Garland-st.

Hampstead.—House.—And garage. P. Granville, 148, Holmleigh-rd., Stamford Hill, N.16. Dep. £1 1s.

Inverness.—Public Baths.—For T.C. A. F. Mackenzie, architect, Town House.

Maidenhead.—Alterations.—And additions to shop premises, 76-78, High-st., Maidenhead; 62, High-st. Alton; 88-89, East-st., Chichester; and 34 and 36, Palmerston-rd., Southsea, for Timothy Whites, Ltd., Construction Dept., 30, Chandos-st., Portsmouth.

Rochester.—Alterations.—And additions to St. Bartholomew's Hospital. Read & MacDonald, architects, 2, Bloomsbury-place, London, W.C.1. Dep. £2 2s.

Whitland.—Manse.—At Blaenwaun, Whitland, for Building Committee of Moriah Congregational Church. D. F. Ingleton, 9, Victoria-place, Haverfordwest. Dep. £2 2s.

MATERIALS, etc.

APRIL 9.

Billinge.—Granite Macadam.—For U.D.C. S.

Glasgow.—Cement, etc.—For Cleansing Dept. of T.C. Director of Cleansing, 20, Trongate.

Litherland.—Granite Chippings.—Geo. Ponsford, M.Inst.M. & CyE., E. and S.

APRIL 10.

Glasgow. — Highway Materials. — For T.C. Director of Housing, 20, Trongate.

Glasgow.—Builders' Materials.—For T.C. Director of Housing, 20, Trongate.

APRIL 11.

Manchester.—Pipes, etc.—For Electricity Committee. H. C. Lamb, Chief E.

APRIL 12.

Ashford (Kent).—Road Materials.—For U.D.C. S.

APRIL 14.

Wellington.—Bituminous Macadam.—For U.D.C. W. Walker, S.

APRIL 21.

Folkestone.—Granite Chippings.—For T.C. E. L. Allman, B.E.

APRIL 23.

Upholland.—Highway Materials.—For U.D.C. A. Hunt, clerk.

MAY 3.

Northfleet.—Highway Materials.—For U.D.C. F. W. Jones, clerk.

ENGINEERING, IRON AND STEEL.

APRIL 9.

Castleford. — Steelwork.—And asbestos cement sheeting and other materials incidental to construction of roofing of proposed fish and meat market, at rear of existing market, off Carlton-st., for U.D.C. C. R. Smith, B.Sc., Assoc.M.Inst.C.E., E. and S. Dep. £2 2s.

Chelmsford.—Sewage.—Main sewage pumping station, sedimentation tanks, bacteria beds with dosing tanks, humus tanks, storm-water tank, small pumping station and all ancillary works, for Joint Sewerage Committee. B.S. Dep. £5.

Kingston-upon-Hull.—Bridge. — Ring-rd. bridge over Foredyke Stream, for T.C. H. Hamer, City E. Dep. £2.

London. — Reconditioning. — And widening of Waterloo Bridge, for L.C.C. Chief E., County Hall, S.E.1. Dep. £20.

Morpeth.—Water Supply.—For parishes of Cresswell, Ellington and Lynemouth, for R.D.C. Balfour & Sons, civil engineers, 3, St. Nicholas-bldgs., Newcastle-upon-Tyne. Dep. £3 3s.

APRIL 10.

Droitwich.—Extension.—Ferro-concrete reservoir and laying 2,380 lin. yds. 8-in. rising main and 1,325 lin. yds. 3-in. and 4-in. distribution mains, for T.C. R. E. Hulse, B.E. and S.

Kettering.—Tank.—And pipes and laying same in parish of Broughton, for R.D.C. Pick, Everard, Keay & Gunson, engineers, 6, Millstone-lane, Leicester. Dep. £2 2s. each contract.

APRIL 12.

Llansilin.—Main.—Laying 1,200 yds. of 2-in. dia. water main and construction of storage reservoir at Moelfre, and erection of public convenience, for R.D.C. R. W. Aubrey, S. Dep. £1 1s. each.

APRIL 14.

Cheadle.—Widening.—Of Ravenoak-rd. bridge and approaches, for Cheadle and Gatley U.D.C. J. Wrest, E. and S. Dep. £5 5s.

APRIL 16.

Aylesbury.—Sewerage.—Sewerage works at Bierton, for R.D.C. Elliott & Brown, chartered civil engineers, Burton-bldgs., Parliament-st., Nottingham. Dep. £3 3s.

Channel Islands.—Tower.—Reinforced concrete fog signal tower, replacement of fog signal machinery and other works at Caskets Light House, Channel Islands, for Corporation of Trinity House. Secretary, Trinity House, Tower Hill, London, E.C.3.

Earby.—Waterproofing.—Of walls and floor of Council's reservoir at Kelbrook, for U.D.C. Water E.

Essex.—Reconstruction.—Of Paper Mill bridge on Danbury-Hatfield Peverel-rd., in parishes of Little Baddow, Boreham and Hatfield, for C.C. R. H. Buckley, M.Inst.M. & Cy.E., C.S., Chelmsford.

Middlesex.—Sewerage.—For contract S.25 for West Middlesex main sewerage, for C.C. Dodd & Watson, engineers, 3, Central-bldgs., Westminster, S.W.1. Dep. £5 5s.

Richmond (Yorks).—Water Supply.—At Clapgate Springs, for T.C. Taylor & Wallin, engineers, 1, Saville-pl., Newcastle-on-Tyne. Dep. £10.

ROAD, SEWERAGE AND WATER WORKS.

APRIL 9.

Bognor Regis.—Surface Dressing.—For U.D.C. J. Draper, S.

Bournemouth.—Making-up.—Of Bankside-rd., for T.C. F. P. Dolamore, B.E. Dep. £1 1s.

Chester.—Making-up.—Of Mason-st., Alma-st., Evans'-place, and passage off Mason-st., for T.C. C. Greenwood, C.E. and S., 43, Northgate-st. Dep. £1 1s.

Enfield.—Making-up.—Of Goat-lane in tarred slag macadam, for U.D.C. E. and S., 7, Little Parkgdns. Dep. £2 2s.

London.—Paving.—12 roads, for Kensington B.C. B.E. and S.

Meriden.—Sewers.—Approximately 840 lin. yds., for R.D.C. H. Pickering, E. and S.

Newcastle-under-Lyme. — Main. — Laying water main from Scot Hay to Finney Green, Keele, for R.D.C. S. E. Lovatt, clerk.

Walthamstow.—Sewer.—5,180 lin. yds. of concrete pipes and tubes, for T.C. T. S. Cunningham, B.E. and S. Dep. £2 2s.

Woodford.—Sewers.—Foul and surface water sewers, Knighton and Monkham estates, high-level sewer (Eastern District), for U.D.C. A. D. Ward, S. Dep. £2 2s. each.

QUARZITE
A NATURAL ROCK
THREE SELF TONES
GOLD OLIVE GREY
HARDER THAN GRANITE
UNUSUAL
TEXTURE
JOHN STUBBS & SONS

APRIL 10.

Drumarg.—Sewer.—On Monaghan and Keady-rds. at Drumarg or Downs, for Armagh R.D.C. W. Calvert, clerk.

Watford.—Making-up.—Woodwaye (Part 1), and construction of accommodation road, The Pond, High-st., also surface water sewer and roadworks, The Crescent, for T.C. W. W. Newman, B.E. Dep. £2 2s.

APRIL 11.

Cambridge.—Construction.—Of concrete carriageways at Soham, for C.C. A. Tabrum, clerk, Cambridge. Dep. £2.

Carshalton. — Widening.—In connection with Avenue-rd. scheme, for U.D.C. J. W. Wright, clerk.

Macclesfield.—Tarspraying.—For T.C. Richard Clegg, T.C.

Merthyr Tydfil.—Sewers.—At farm lands at Troedyrhiw, for T.C. B.E.

Rochdale.—Paving.—Of Channing-st., Charleston-st., and drainage and sewering of Midgley-st., for T.C. B.S.

APRIL 12.

London. — Paving. — Portion of Sigismund-st. extending from its junction with Weetman-st., for Greenwich B.C. B.E. and S.

Newbury.—Making-up.—Of Arthur-rd. and Enborne-pl., for T.C. B.S.

APRIL 13.

Crediton.—Sewer.—Laying 160 yds. 6-in. sewer at new buildings, Sandford, together with manholes, etc., for R.D.C. E. Chell, Sanitary Inspector, Tors View, Barnstaple Cross.

APRIL 14.

Dover.—Surfacing.—Dressing of roads, for R.D.C. C. W. Whitewood, S., Crabbe Hill.

Horsforth.—Making-up.—Of Victoria-crescent, Victoria-drive, Victoria-mount, Victoria-walk (east), Victoria-walk (west), for U.D.C. J. E. Aldersley, S. Dep. £2 2s.

Kent.—Roads.—Surface dressing area of approx. 3,000,000 sq. yds. of roads, for C.C. H. T. Chapman, C.S., St. Peter-st., Maidstone.

Long Eaton.—Sewerage.—Works for U.D.C. H. Raven, E. and S. Dep. £5 5s.

APRIL 16.

Grimsby.—Pipes.—1,470 yds. of stoneware and concrete pipes varying in dia. from 9 in. to 24 in., with incidental works for sewers in Springfield and Fairfield-rds., Scartho, for T.C. H. G. Whyatt, B.E. Dep. £2 2s.

Loughborough.—Making-up.—About 170 yds. of William-st., for T.C. W. Granger, B.S. Dep. £1 1s.

Potters Bar.—Sewer.—1,950 lin. ft. 9-in. dia. glazed stoneware sewer with manholes and other works; also reinforced concrete culvert in Darkes-lane, for U.D.C. E. Carr, S. Dep. £1.

APRIL 17.

Bromley.—Laying.—3,236 sq. yds. reinforced concrete road foundation with wood block surfacing, including excavation and pavement works, in High-st., and Market-st., for T.C. B.E. Dep. £1.

APRIL 18.

Melton Mowbray.—Road.—In Market-pl. and South-parade, for U.D.C. W. H. Jarvis, S. Dep. £1 1s.

Public Appointments.

APRIL 9.

***Dublin.**—Three Assistant Architects and Four Architectural Draughtsmen.—For Dublin Corporation. Secretary of the Commission, 45, Upper O'Connell-st.

Runwell, Essex.—Clerk of Works and Assistant Clerk of Works. At new Mental Hospital, for East Ham and Southend-on-Sea Joint Visiting Committee. C. Eustace Wilson, H. J. Worwood, Joint Clerks, Town Hall, East Ham.

APRIL 14.

***Huddersfield.**—Two Architectural Assistants and one Quantity Surveyor (temporary).—For C.B. W. Jaggar, B.E. and S.

***Leeds.**—Chief Quantity Surveyor (temporary).—For T.C. Thos. Thornton, T.C., Room 57, Civic Hall.

***Leeds.**—Architectural Assistant (temporary).—For T.C. Thos. Thornton, T.C., Room 57, Civic Hall.

***Leeds.** — Architectural Assistant. — For T.C. Thos. Thornton, T.C., Room 57, Civic Hall.

London.—Junior Draughtsman (temporary).—For L.C.C. Architect, County Hall, Westminster Bridge, S.E.1.

***London.** — Architectural Assistants (temporary) in Designs Branch of the Directorate of Works and Buildings, Air Ministry Secretary, Air Ministry (S.2). Adastral House.

APRIL 16.

***Hampstead.**—Clerk of Works.—For Borough of Hampstead. P. H. Harrold, T.C.

***St. Helens.**—Architectural Assistant.—For C.B. A. P. Statham, Borough and Water Engineer.

***Southampton.**—Clerk of Works, for C.B. R. R. H. Meggeson, T.C.

APRIL 18.

***Ipswich.**—Junior Architectural Assistant (temporary), for East Suffolk C.C. County Architect.

***Ipswich.**—Junior Architectural Assistant (permanent), for East Suffolk C.C. County Architect.

APRIL 21.

***Northallerton.** — Architectural Assistant, for North Riding of Yorkshire C.C. Hubert G. Thornley, clerk, County Hall.

APRIL 23.

Edinburgh.—Head of Dept. of Building at Heriot-Watt College. J. Cameron Smail, Principal.

CURRENT & PROPOSED BUILDING WORK*

Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

Alfreton.—Managers of Swanwick Hall school propose central hall to buildings.

Antrim.—For school at Mallusk, C.C. to apply for sanction to £3,970 loan.

Ardsley.—Council decided upon erection of 64 dwellings.

Armagh.—Plans prepared by H. Seaver, B.E., Belfast, for additions to library of St. Patrick's Cathedral for Dean and Chapter.

Baldock.—Application to M.H. being made by U.D.C. for sanction to borrowing £2,012 to purchase site at Mansfield-rd. and Weston-way for houses. C. H. Hignett, Croft-lane, Letchworth, appointed architect.

Ballinasloe.—Auxiliary mental hospital at £120,000. Plans approved.

Barking.—T.C. propose £415 on improvements to Eastbury House.—Rectifying sub-station junction of Rugby-rd. and western end of Basedale-rd. at £1,856. Tenders to be invited.—Tenders also to be invited for sub-station at Manor Farm estate.—M.H. sanctioned Council's application to borrow £16,300 for development of northern portion of Becontree Western Open Belt.

Belfast.—Corporation Tuberculosis Committee to proceed with enlargement of city sanatorium at £100,000. Architect's competition proposed.

Bilston.—Public Library Committee to have plans prepared for public library on site of Bructon House.

Bishop Auckland.—B. of E. sanctioned additional classrooms at King James I. Grammar School, at £10,000. County Architect, F. Willey, 34, Old Elvet, Durham.

Blyth.—T.C. received sanction of M.H. to undertake first portion of proposed slum clearance scheme.

Bolton.—Catholic Authorities propose girls' school for Parish of St. Peter and St. Paul (John C. Mills, P.P., Pilkington-st.). H. Greenhalgh, architect, 16, Mawdesley-st.—T.C. recommended preparation of plans for technical college.

Bournemouth.—T.C. approved: Warehouse, Deansrd., Southbourne, H. G. Mills & Son; church hall, Draycott-rd., Rev. Michael O'Riordan; 38 houses and garages, Ashford-rd., J. N. Hardy; 17 flats, Orchard-st., Commander Munro.

Bradford.—Plans prepared for rebuilding "Melbourne Arms," White Abbey-rd., for Leeds & Wakefield Breweries, Ltd., architects, J. Young & Co. Tenders invited.

Bramhope.—Tenders invited for additions at "Dyneley Arms Hotel," for Samuel Smith & Co., Ltd., The Old Brewery, Tadcaster. Architect, H. L. Fox, Leeds.

Brierfield.—Lancashire E.C. propose senior school. Plans by County Architect, Stephen Wilkinson, 16, Ribblesdale-place, Preston.

Brownhills.—U.D.C. received permission to 300 more houses.

Bungay.—U.D.C. proposing 20 houses.

Campden.—R.D.C. recommend lay-out plan and acquisition of site at Batsford for 26 houses.

Cannock.—E.C. approved plans for improvements at West Hill (Hednesford) boys' school.—New elementary school is to be erected at Littleworth.

Catterick Camp.—H. Coxhead & Co., builders, Davison-st., Middlesbrough, making start on 200 houses for C. Walker, of Walkerville estate.

Chapel-en-le-Frith.—Wilson's Brewery, Ltd., Monsall-rd, Brewery, Newton Heath, Manchester, propose structural alterations to "Bulls Head" hotel. Plans in Architect's Dept., C. W. Highfield, Chief Architect.

Chepstow.—R.D.C. proposing 50 houses.

Chester.—T.C.'s Housing Committee recommend £154 for renewing concrete posts and fencing to 38 houses fronting to Cliveden-rd., Buddicom-pk. estate.—Plans passed: Extensions to nurses' home, Chester Infirmary; alterations to "Coach and Horses," 39, Northgate-st., and "Wheatsheaf Inn," Christleton-rd., for Greenall, Whitley & Co., Ltd.; revised lay-out for 50 houses, Abbots-court, T. Warrington & Sons, Ltd.—Scheme for conveniences near "Black Lion" hotel, Boughton, being considered.

Dartford.—R.D.C. approved: Alterations and additions, "Black Lion" p.h., Hartley, The Dartford Brewery Co., Ltd., Medway Brewey, Maidstone; 10 pairs brick houses, Brent-close estate. Stone, W. F. Summers, "Rivermeade," The Brent, Dartford.

Derby.—Managers of Derby school propose improvements to buildings at £9,500. Plans by Borough Architect, C. H. Aslin, Gower-st.

Dewsbury.—L. G. Mouchel & Partners, civil engineers, 38, Victoria-st., London, W.1, preparing scheme for new Savile Bridge, for T.C. Cost, £25,000.

Dronfield.—Clifford Bond, 71a, Lower-pavement, Chesterfield, preparing plans for development of land at Green-lane for housing estate at £150,000.

Droylsden.—Taylor & Simister, FF.R.I.B.A., 29, Queen's-st., Oldham, architects for district nurses' home, Manchester-rd., for Committee of Droylsden Sick Nursing Association. Tenders invited.

Dudley.—Parochial Council of Netherton Parish Church propose extensions to Vicarage at £2,000.

Enniskillen.—New gymnasium and houses for officers of R.U.C. Depot to be erected at £24,000.

Essex.—Highway Committee of C.C. recommend £365 for fencing at Frating Green, and £456 for housing roadmen.—Public Health Committee recommend £300 for site for treatment centres at Thundersley.—E.C. recommend £3,666 for senior school at Harold Wood; £1,540 for St. Chad's-rd. school, Tilbury, and £351 for additional staffroom, office accommodation at proposed junior school, Clacton-on-Sea.

Eton.—R.D.C. approved: Burnham, café, swimming-pool and incidental buildings at Tea Gardens, Burnham Beeches, for Mrs. Wingrove.

Ettingshall.—Methodist Church Members propose Sunday school at £5,000.

Everton.—For new Bethesda Church and Sunday school, to cost about £3,100, the architect is Leon Berger. Building will be in Loraine-st., off Brecksfield-rd. North.

Evesham.—Rev. H. C. R. Eltoft and Parochial Council of Marston Green Parish Church propose church with accommodation for 250 people. Cost, £10,000.—A. H. Cross, 66, Bridge-st., architect for reconstruction of "Vauxhall Inn," Marston Green, for Cheltenham Original Brewery Co., Ltd., 126, High-st., Cheltenham.

Glendale.—R.D.C. has under consideration proposal to reconstruct isolation hospital at £1,300. G. Reavell, architect, Lloyds Bank-chams., Alnwick.

Grays.—S. to U.D.C. instructed to submit sketch plans for two-bedroom type of house.

Great Barr (Staffs).—Walsall and West Bromwich (Barr Colony) Joint Board to prepare scheme for additional buildings at £70,000. H. W. Shipley, Kingscourt, Bridge-st., Walsall, architect.

Gt. Yarmouth.—Olley & Haward, F.R.I.B.A., 5 Queen's-st., appointed architects for factory in Caister-rd. for Smith's Potato Crisps (1929), Ltd., Gt. West-rd., Brentwood.

Guisborough.—U.D.C. proposes 20 houses and borrow £6,000 to cover cost.

Gwyrfai.—R.D.C. declared number of areas to be clearance areas, total number of houses to be demolished being given as 129; new houses to be erected, 101.

Halifax.—G. R. Oddy, architect, Ward Endchambe., preparing plans for Commercial Garage, for O. & O. Holdsworth, engineers, Gibbett Hill.

Huddersfield.—T.C. propose cubicle block and extensions to nurses' home at isolation hospital, Mill Hill.—G. Mallinson & Sons, Ltd., Spring-grove Mills, Linthwaite, had plans prepared for extensions to works. Contracts not let.

Kettering.—Methodist Chapel Committee propose Methodist hall and Sunday school in Windmill-av. at £4,000.—U.D.C. propose 52 houses on Brook-st. site. Plans by S.—U.D.C. approved lay-out plan of Brook-st. site (proposed to be purchased from H. W. Mobbs).

Kingston-on-Thames.—T.C. approved clearance order in regard to Canbury-passage area "A."—B.S. to carry out repairs to roof of electricity works. Down Hall-rd.—Public Health Committee recommended B.S. to prepare scheme for small flats.—Council received M.H. sanction to compulsory powers to acquire property in Orchard-rd., Brook-st. and Acre-rd.—Plans passed: Richmond-rd., 6 shops, Partridge & Daniel; Druids Head, Market-place, alterations, R. W. Cann; Kelly's Factory, Mill-st., offices, mess-room and lavatories, Ides, Ltd.

Leamington.—T.C. approved:—factory, Tachbrook-rd., Borg & Beck, Ltd.

Leeds.—Leeds & Wakefield Breweries, Ltd., Melbourne-st., to carry out additions at the "Duke William Inn," Cromwell-st. Plans by Brewery Co.'s architect.—Authorities of Cathedral Church of St. Annes, Cookridge-st., propose schools for Parish of Our Lady of the Rosary. Architects, Marten & Burnett, L. & A.R.I.B.A., 76, Albion-st.

Leicester.—Hospital Committee propose nurses' home at City Isolation Hospital at £35,000.

Leigh.—T.C. approved lay-out plans for 401 houses, Mather-lane, No. 2 site. Plans by B.S.—George Shaw & Co., brewers, The Brewery, propose rebuilding of "Greyhound" inn, corner of Manchester—Liverpool-rd. and Warrington-rd., Glazebury. Plans by E. Frankland, resident architect. Contracts not placed.

Liskeard.—T.C. to submit to M.H. plan of lay-out of 14 houses at Park View, together with amended scheme of slum clearance, involving 34 houses, and removal of 20.

Liverpool.—W. T. Clark, A.R.I.B.A., Baltic-bldgs., 8, Red Cross-st., prepared plans for 91 houses on Ewanville estate, Huyton.—Swansides estates, Ltd., Pilch-lane, Knotty Ash, propose 40 houses on Swanside estate.—A. Wattling, Estate Office, Archway-rd., Huyton, had plans prepared for 94 houses, Archway estate.

Liverpool.—T.C. to construct bridge over railway on Hillfoot-rd.—M.H. sanctioned borrowing of £895 in connection with Melrose-rd. baths and washhouse.—M.H. forwarded formal sanctions to borrowing £59,160, £13,210, £191,273, £120,168, £9,092 and £35,260 for housing.—Plans prepared by Land Steward and Surveyor for modernisation of Parkhill Council School.

Liverpool.—Kenmure Kinna, A.R.I.B.A., 14, Castle-st., is architect for buildings in Rathbone-rd. for Directors of Liverpool Hide and Skin Market.

London (Bermondsey).—L.C.C. informed B.C. of intention to sanction cottages in Lavender-lane, Rotherhithe-st.—M.H. approval given to compulsory purchase of Cranbourn-place and Neptune-st.—Plans passed:—C. J. Johnson, building, 8, Clare Hall-place; H. J. Thompson, motor garages, Fort-rd.; G. C. Russell, building at Arches 494 and 495, Silwood-st.; Thos. Owden Hart, 42, Tanner-st., building abutting on Tower Bridge-rd.

London (Hammersmith).—B.C. approved:—Additions to 2, Down-pl. for A. Pascall & Son, Ltd.

London (Leyton).—T.C. received sanction to borrow £2,508 for Capworth-st. school, installation of central heating system, and £2,504 for alterations to Kirkdale-rd. school.

London (Stepney).—B.C. received sanction of L.C.C. to borrowing £2,716 for acquisition of properties in connection with new tuberculosis dispensary.—Council recommend £10,591 for Beccles-st. clearance scheme.—Council also recommended scheme of Adshead & Ramsey, FF.R.I.B.A., Gt. Russell-st., W.C.1, for Branch-rd. housing scheme.—£750 to be spent on wall upon boundary of Riverside Mansions adjoining property of Weber, Smith & Hoare, Ltd.—Council recommend development of Arbour-sq. site.

London (Wimbledon).—B.C. passed drainage plans for 73 houses on Lucien-rd. estate.—Alterations to shops and erection of flats at 221-227, Broadway proposed.—Council sanctioned 32 flats at junction of The Ridgeway with The Grange.—Flats also sanctioned by Council for erection at The Downs, near The Ridgeway.—Council are proposing to sell land at rear of Faraday-rd. to Public Utility Society, Ltd., for housing.—T.C. proposes improvements to open-air baths, Wandle-pk.

London (Woolwich).—B.C. recommend B.E. to carry out repairs and renovations to library buildings and Gossage-rd. property at £476.—Council recommend purchase of Shrewsbury House and adjoining land at £9,000 for purpose of library or museum.—Plans passed: A. H. Watmough, 65, High-st., Croydon, 12 shops between 59 and 83, Avery Hill-road, New Eltham; C. E. Hartshorne, 1a, Alderman's-hill, Palmers Green, N.13, amended lay-out of the Hill estate, Shrewsbury-lane, Plumstead; Dyer, Son & Creasey, 24, Budge-row, Cannon-st., E.C.4; shops, 190-196, Court-rd., Eltham; E. S. Pritchard, 27, The Grove, Hammersmith, W.C. (on behalf of G. Wimpey & Co., Ltd.), amended plan of drainage for 95 houses, Moordown, 7 houses, Donaldson-rd., 2 houses, Ankerdine-cres., Jackson estate, Plumstead; W. R. Hindmarsh & Co., 9, Thomas-st., Woolwich (on behalf of S. C. & W. Richards), 17 houses, Thaxted-rd., Eltham; A. J. Butcher, 2, Express-mansions, Edgware, 11 houses and 1 garage, Plum-lane, Plumstead; Cluttons, 5, Great College-st., S.W.1, lay-out of street from Eltham-rd. to South Circular-rd., Eltham.

Loughborough.—Management of Children's Convalescent Home, Woodhouse Eaves, propose 12 additional beds at £6,000.

Manchester.—Hughes Buildings, Ltd., Minshull-st., propose offices, corner of Aytown-st. and Auburn-st.—Board of the Manchester Babies' Hospital, Burnage-lane, Levenshulme, propose extensions to institution providing for 40 additional cots. Plans by Bradshaw Gass & Hope, FF.R.I.B.A., 19, Silver-well-st., Bolton.—E.C. propose erection of school at Hayeley Hay, Wythenshawe. Plans by Architect's Department, Education Offices, Deansgate.—G. J. Brown & Son, surveyors, 11, Little College-st., Westminster, S.W.1., propose development of land for shops on Moston-lane, Moston.—British Vinegars, Ltd., South Lambeth-rd., London, S.E., propose adaptation of premises on Stockport-rd. and Gray-st., Longsight, for vinegar brewery.—Col. George Westcott, F.M.S.A., 13, Bridge-st., to prepare plans for rebuilding of the "New Inn" public-house in Hackle-st., Clayton, for Groves & Whitnall, Ltd., Regent-rd. Brewery, Salford.—S. Birkett, A.R.I.B.A., 16, John Dalton-st., architect for alterations to offices and warehouse at "Portland House," corner of Portland-st. and Princess-st.—H. Redfern, F.R.I.B.A., King's-bldgs., Dean Stanley-st., London, S.W.1., to prepare plans for rebuilding "Royal Oak Hotel," Wythenshawe estate, Northenden, for Wilson's Brewery Co., Ltd., Monsall-rd. Brewery, Newton Heath. Contracts not let.—Roberts & Wood, architects, 25, King-st., preparing plans for petrol-filling station and service garage, Princes-rd., West Didsbury. Contracts not let.

Margate.—Painting work to be carried out to railings, seats, shelters, staircases, etc., on sea-front, at £605, by direct labour, for T.C.—B.S. to prepare scheme for enlarging men's and women's lavatories at Buenos Ayres, and to submit estimate for redecoration of Marine-drive lavatories.

Middlesbrough.—Town Council propose to extend Dorman, Long Museum. T. W. Burgess, B.E.—T.C. proposes 250 more houses. S. E. Burgess, B.S.—Housing Committee approved 100 houses on Whinney Banks estate, 100 on Brambles Farm estate and 60 aged people's houses, Marton-grove, Whinney Banks and Brambles Farm estates, B.E.

Middlesex.—C.C. received sanction to borrowing following:—elementary school, Grange Park estate, Hayes, £15,887; purchase of Manor House, Hayes, for secondary school and provision of playing fields, £8,890; purchase of land adjoining playing fields of Wembley County School for elementary school, £3,660; two additional classrooms in connection with enlargement of East-lane Council (senior) school, Wembley, £1,400; and widening Ealing-rd. Bridge, Southern Railway, £28,500.—Public Health Committee recommend £460 for alterations and redecorations at Willingdon County Hospital.—Subject to approval of B. of E., County Architect to carry out works to rear portion of secondary school site in Carterhatch-lane, Enfield, at £250.—Alterations, repairs, reconditioning and addi-

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* See also List of Contracts Open.

** In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.

tions at Shenleybury Farm proposed at £19,850.—Partitions at 10, Great George-st. for additional office accommodation at £650 been approved.

Mold.—At meeting of U.D.C., architect, Norman Fisher, L.R.I.B.A., produced lay-out plans for 18 houses at Bro Alun and 48 at Coelia Moch

Nelson.—T.C. received M.H. sanction to 35 houses in Pinder-st.

Newcastle-upon-Tyne.—T.C. to build home in grounds of St. Mary Magdalene Home in Spital Tongues.

Normanton.—Blenkinsopp & Scatchard, Midland Bank-chams., Castleford, architects for shops and houses on Three Lane-ends, Whitwood.

Norwich.—A. Caröe, A.R.I.B.A., of Caröe & Passmore, architects, 3, Great College-st., London, S.W.1, preparing plans for C.E. Church at Mallcross for Diocesan Authorities.

Pershore.—Worcestershire Standing Joint Committee recommended that County Architect prepare plans and estimates for new station with 4 married quarters, 3 cells and courtroom, and to negotiate for site.

Plymouth.—Work is to start on new hotel to be built on site of Cawsand Fort, overlooking Plymouth Sound. In association with Barron & Rooke, building is being designed by David Evans, consulting engineer.

Pontefract.—F. Rowntree & Sons, architects, Museum-chams., York, preparing plans for additions to Ackworth Friends' school.

Portsmouth.—T.C. approved: Royal Pier & Queen's Hotels (Southsea), Ltd., additions to hotel, Bellevue-terr., Southsea; Brickwood & Co., Ltd., hotel, Havant-rd., Farlington.

Preston.—Members of Leyland Methodist Church accepted designs for Sunday school and assembly hall, submitted by Foden, Hemm & Williams, architects, 199, Deansgate, Manchester.

Redcar.—Redcar Methodist Union Building Committee proposing church at Dormanstown for 500 people. Cost, £5,000. Architects, A. Brocklehurst & Co., Palatine Bank-bldgs., 10, Norfolk-st., Manchester. Tenders to be invited.

Rossington.—Miners' Welfare Central Fund Committee propose pithead baths. Plans by J. H. Forshaw, A.R.I.B.A., Mine Section, Dean Stanley-st., London, S.W.1.

Rotherham.—E.C. propose junior mixed school on Coleridge-rd. Accommodation for 400 scholars. Plans by B.E.

Rugby.—Governors of Lawrence Sheriff school propose wing, Moultrie-rd. Plans by W. T. Loveday, 20, Lawrence Sheriff-st.

Rugeley.—Staffordshire E.C. and Works Sub-committee recommend sketch plans for school to accommodate 360 senior children on site off Brereton-rd.

St. Ives (Cornwall).—T.C. approved plans and specifications by B.S. for 15 houses, Bullan's-lane site, at £15,150.

Seaham.—Sanction received by U.D.C. to borrowing £50,000 for 138 houses to plans by J. B. Abbey, S

Selby.—Sir Alexander Gibb, Queen Anne's-gate, Westminster, S.W.1, been appointed consulting engineer for survey work in connection with new bridge across Ouse and by-pass road at Selby.

Sheffield.—Tenders to be invited for hostel for men students of University at Oakholme-rd. Architect, J. C. Proctor, Leeds.—E. Gardham, A.R.I.B.A., Campo-chams., Campo-lane, prepared lay-out of land at Earl Marshall-rd., Pitsmoore, for housing scheme.—J. C. Mason, builder, 55, Norfolk Park-av., propose shopping centre, Richmond housing estate, Richmond-rd., Intake

Sherburn Hill (Durham).—Durham R.D.C. inviting tenders for 107 houses.

Southend.—T.C. proposing road and bridge over River Crouch.—E. N. Selby, S., informed T.C. of proposed factory in southern end of Darlinghurst-grove.—At £170 public convenience for ladies to be erected at western end of Belfairs refreshment house.—C.B. approved: 29 houses, Cockethurst-av., Cockethurst Estate Co., Ltd.; factory, Stanfield-rd., St. Ann's Manufacturing Co., Ltd.

South Shields.—B. of E. approved plans by E.C. for high school for boys. Tenders to be invited. Architect, G. R. Smith, 63, King-st., and Allen & Hill, 21, Grainger-st., West, Newcastle, are quantity surveyors.—T.C. approved plans for 76 semi-detached houses, Marsden-rd., for Col. R. Chapman, architect, F. W. Newby, King-st.; plans by J. H. Morton & Son, Martins Bank-chams., Fowler-st., for lay-out of 40 houses in Windsor-gardens; and by Messrs. Morton for bank premises and house for South Shields Savings Bank Co., at Westoe; by T. A. Page & Son, King-st., 28 houses in Westoe Village, for M. Swailes, builder.

Stafford.—Staffordshire E.C. Works Sub-committee have under consideration sketch plans for proposed new county technical college.—Management of Staffordshire General Hospital propose nurses' home, etc., as additions.

Stockport.—Peter Peirce & Sons, architects, 30, St. Petersgate, architects for bank at Romily, for Trustees of Stockport Savings Bank, 43, Lower Hillgate.—Adswood Estate Co., 1, Cooper-st., Manchester, acquired Adswood Hall Farm estate for 800 houses. Plans by J. Lloyd Edwards, 1, Ridgefield, Manchester.—F. Collier, 45, Thornley-lane, Reddish, architect for club premises and public hall in North-st., junction of Wallwork-st., for North Reddish Working Men's Club Building Committee.—Very Rev. Hugh McGeevor, P.P., Our Lady and Apostles, Shaw Heath, Edgeley, propose additions with accommodation for 150 children to schools. Plans by Leonard Yates, "Kajali," Buxton-rd., Disley. Contracts not placed.

Stoke-on-Trent.—Stoke-on-Trent Fat Stock Society propose central market hall, cricket ground site, at £10,000. Secretary, W. Foulson.—T.C. approved: T. B. Cartlidge, off Biddulph-rd., Chell, 68 houses; Holloway & Co., off Drubbery-lane, Longton, 25 houses; N.W. Midlands Joint Electricity Authority, Fenton-rd., Joiner's-sq., sub-station; Ritz Cinema (Tunstall), Ltd., High-st. and Hunt-st., Tunstall, cinema; Richards Tiles, Ltd., Pinnox Tile Works, Tunstall, warehouse; J. H. Broadhurst & Co., Dency-grove and Fairway-rd., Burslem, drainage to 26 houses; Parkers (Burslem) Brewery, Ltd., "Bee Hive" Inn, Market-st., Hanley, alterations; C. McIlroy, City Arcade, Hanley, alterations to warehouse; J. H. Barratt & Co., Boothen Old-rd., Stoke, Glost warehouse; Doulton & Co., Ltd., Nile-st., Burslem, warehouse; Rev. Faulconer-Morgan, St. Peter's Roman Catholic Church, Cobridge, presbytery; Barlow Bros., Rothesay-av., Sneyd Green, 22 houses; North West Midlands Joint Electricity Authority, Fenton-rd., Hanley, sub-station.

Sunderland.—Five years' programme of educational development, involving an expenditure of £428,016 and erection of 13 schools with accommodation for 5,484 pupils and alterations to 16 schools, being considered by E.C. Mr. O. T. Mark, Education Architect.—T.C. inviting tenders for installation of centralised heating and domestic hot water supply at swimming baths in Newcastle-rd. T. P. Collinge, B.E.—T.C. to consider plunge bath at Hendon at £5,500. T. P. Collinge, B.E.

Tynemouth.—J. D. Beckett, B.E., is to prepare plans for 238 houses of two bedrooms, 20 with three bedrooms and 46 four-bedroomed on Ridges estate.—A. K. Tasker, Trinity-bldgs., New Bridge st., Newcastle-on-Tyne, architect for additions to Mercantile Building Society, 25, Northumberland-sq., North Shields. Plans being prepared.

Walsall.—T.C. approved plans for club-house at Aerodrome.—Joint Management Committee approved plans for workshops for blind in Hatherton-rd. Architect, R. Jeffries, Kingscourt-chams., Bridge-st.—Highgate (Walsall) Brewery Co., Ltd., Highgate, proposing licensed premises in Birchills-st. Architect, H. W. Shipley, of Jeffries & Shipley, Kingscourt-chambs., Bridge-st.—H. W. Shipley, of Jeffries & Shipley, Kingscourt-chambs., Bridge-st., architect for licensed premises on Pleck-rd., for Ansell's Brewery, Ltd., Aston Brewery, Park-rd., Aston, Birmingham.

Warwick.—Ansell's Brewery Co., Ltd., Park Brewery, Aston, Birmingham, prepared plans for rebuilding "Rugby Tavern," Cubbington, on adjacent site.

Wednesbury.—Application about to be made by Ansells Brewery Co., Ltd., for approval to alterations at "George Inn," corner of Union-st. and Upper High-st.

West Bromwich.—Walsall and West Bromwich Joint Board appointed H. W. Shipley, architect, Kingscourt-chams., Bridge-st., Walsall, to prepare plans to provide for 400 additional county patients at Barr Colony at £70,000.

West Derby.—Nurses' home to be built at £5,000 or £6,000, for Liverpool Queen Victoria District Nursing Association.

Whitley Bay.—Dixon & Bell, architects, Pearl-bldgs., Northumberland-st., prepared plans for 24 houses in flats in Cauldwell-av. Builder, W. Mather, Monkseaton.

Widnes.—T.C. approved: Extension to pipe factory, off Derby-rd., Turners Asbestos Cement Co., branch of Turner & Newall, Ltd.; extension of offices, Tan House-lane, I.C.I. (General Chemicals), Ltd., Pilkington-Sullivan Works; 31 houses, Mayfair estate, J. F. Lewis.

Wigan.—Rev. W. H. Royden and Parochial Council of St. Catherine's Church propose additions to school. Cost, £5,000.

Windsor.—T.C. approved: Mineral water factory, Maidenhead-rd. (late Harding's Garage), Direct Supply Aerated Water Co., Ltd.; alterations, "The Swan" p.h., Mill-lane, Courage & Co., Ltd.

Wolverhampton.—Dudley Guest Hospital Board of Management placed contract for second portion of development scheme to cost £32,000.

Wombwell.—Members of the Spiritualistic Church propose church in Kelvin-grove to accommodate 200 persons.

York.—At meeting held at Folk Hall, New Earswick, plans considered for public hall, with seating accommodation for 450 people, to be attached to present building, and to include library with separate approach. Mr. Hall (from the firm of Mr. Barry Parker, architect) and Mr. Scarr (of the architect's department, Rowntree & Co.), attended meeting.

FOR TOWN AND SEASIDE

HIGH GLOSS

"FERRODOR" PAINT

—the long-life enamel paint which retains its brilliant gloss in the town, and at the seaside. Looks like enamel and gives outstanding service indoors and out-of-doors.

GRIFFITHS BROS. & CO.

LONDON LTD.

Macks Road Bermondsey, S.E.16.

TRADE NEWS

Change of Address.

The Cement Testing Works and Chemical Laboratories (Messrs. Henry Faija and Co.) have now removed to 1, Buckingham Palace-gardens, Westminster, S.W.1 (opposite Victoria Station). Telephone: Sloane 2969.

Hampton, Middlesex.

An expenditure of £365,200 is recommended by the Works and Stores Committee of the Metropolitan Water Board for the remodelling of the Board's Hampton works. The items are:—£220,200 for machinery. £130,000 for buildings, and £15,000 for working out mains.

Rapid-Drying Enamels.

A rapid-drying, non-cellulose enamel which may be easily applied by brush or spray with lasting results has been placed on the market by Messrs. Hucol, Ltd., of Hind-court, Fleet-street, E.C.4. This dual advantage is given by a thin consistency obtained by the special nature of the vehicle used and by a special process of grinding the pigments. An effect similar to porcelain is claimed, as well as a high degree of hardness, these properties being given by the incorporation of hard, synthetic resins "Hulene" enamels are stated to be acid- and alkali-resisting and to be washable. As four hours is, under normal circumstances, the drying time, two coats may be applied on the same day. Details and a colour card are obtainable upon request. The enamel may be applied to almost any surface.

A New Surface Fabric.

A new surface fabric for concrete and asphalt paving has been put on the market by Messrs. W. Carrick Howat, 121, West George-street, Glasgow. A leaflet received indicates that "Lindsay's Surface Fabric" is composed of straight steel strips laid on edge, in parallel grille formation. The principle is that the top edge of the steel forms part of the wearing surface, thereby limiting the rate of wear of the whole surface to that of the steel. The strips also distribute over the paving the traffic and impact loads to which the surface is subjected. It is claimed that the fabric enables the paving to withstand the most destructive traffic and prevents cracking, creeping and disintegration. While the fabric can be made to fit any irregular area, the standard width is 37 in., which, allowing an overlap of 1 in., gives an effective width of 3 ft. The strips are 1 in. deep by 12 gauge, and are spaced 1 in. apart.

This fabric appears to us to have considerable possibilities for roads, yards and quays, and for those floors of buildings subjected to heavy wear, such as warehouses, factories, stores, dairies, and so on. A notable instance of its use is at the Royal Infirmary, Glasgow, where much unloading of heavy gas cylinders goes on. This was laid a year ago, and in spite of this hard usage, there are no signs of cracking or wear. Readers interested should send for further particulars.

New Grade of Refrigerators.

H.M.V. Household Appliances, Ltd.—a subsidiary of the Gramophone Co., Ltd.—has been formed with offices and showrooms at 363-7, Oxford-street, W., to market high-grade electric household appliances. A range of electrical household refrigerators is the first of such appliances to be marketed by the new company. A number of these refrigerators were on exhibition at a gathering at the Savoy Hotel on March 28, and drew favourable comment from the guests. The external designs have been produced by Mr. Christian Barman, F.R.I.B.A., who has been appointed consulting architect to the new company. While this special attention has been paid to external appearance, the experience of the Gramophone Co. in the design of electrical apparatus and motors has been brought into play to ensure that, as refrigerators, the H.M.V. models shall be unsurpassed. Four models, of 4.7, 5.4, 6.7, and 7.8 cu. ft. storage capacity, are at present available and incorporate a number of details new to the trade.

PRICES CURRENT OF MATERIALS.

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to Mortlake.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 10 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
"Phorpres"	2 11 3	Flettons, B'll'n'se	3 6 3
Flettons at King's Cross	2 11 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 13 3	Do. Bullnose	9 15 0
		Blue Wire Cuts	7 5 0

White Midhurst Facing Bricks (delivered London site)	5 0 0
"Phorpres" whites (do.)	3 17 3
"Phorpres" Rustic Facing Bricks, delivered Central London per 1,000	3 12 3

Best Stourbridge Fire Brick:—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
Headers	20 10 0	One side and two Ends	30 10 0
Quoins, Bullnose and 4½ in.		Two sides and one End	31 10 0
		Splays and Squints	28 0 0
Flats	27 10 0		

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup	2 0
2½ " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½ " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

2" per yd. sup.	3 3	3" per yd. sup.	3 9
2½ " "	3 6	4" " "	4 3

	s. d.	
Thames Ballast	7 3 per yd.	delivered 2 miles radius Paddington.
Pit Ballast	6 3 " "	
Pit Sand	7 9 " "	
Washed Sand	8 3 " "	
½ in. Shingle	7 3 " "	
¼ in. Broken Brick	11 3 " "	
Pan Breeze	8 3 " "	

CEMENT.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test

In Jute Sacks (11 to ton)	£2 4 9
In Paper Bags (20 to ton)	2 6 0

Colorcrete No. 1 & 2 Coloured Rapid Hardening Portland Cement in 1 cwt. paper bags free (non-returnable) 20/- per ton above Portland Cement Price.

"Snowcrete" White Portland Cement in 1 cwt. paper bags free (non-returnable) 175/- per ton.

Alongside Vauxhall in 80 Ton Lots.

Jute Sacks (11 to ton)	1 17 9
Paper bags (20 to ton)	1 19 0
Ferrocrete per ton extra on above	0 7 6
Vitrocrete per ton extra on above	0 7 6

NOTE.—Jute Sacks are charged 1s. 6d. each and credited 1s. 6d. each nett if returned in good condition within three months, carriage paid.

Super Cement (Waterproof) Paper Bags free	3 16 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0

PLASTER.

Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	4 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 5 0
Chalk Lime	2 5 0
Best Ground Blue Lias Lime	1 17 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 6d. each and credited 1s. 6d., if returned in good condition within three months carr. pd.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube .... s. d. 2 10

BEER STONE—RANDOM BLOCK—

Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R., per ft. cube	3 1½

Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.

PORTLAND STONE—

Brown Whitbed, in random blocks of 20ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road waggons at above stations, per ft. cube	4 5½
White basebed, 3d. per ft. cube extra.	

NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE—

F.O.R. Quarries Wirksworth, Derbyshire,	s. d.
Random blocks from 10ft. and over P.ft.cb.	14 0
Sawn two sides	22 6
Sawn, three or four sides	27 6

CHILMARK—RANDOM BLOCK— s. d. 3 11

At Nine Elms, per ft. cube	

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in., ditto "	1 3½

HARD YORK—

Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	3 1½
3 in. ditto ditto "	2 8
2 in. self-faced random flags Per yd. super	8 0

CAST STONE.*

Delivered in London area in full van loads, per ft cube: Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11	£23 10	3 × 6	£18 10
4 × 9	22 10	3 × 11	19 10
4 × 8	21 0	2 × 11	19 10
4 × 7	19 0	3 × 9	19 10
3 × 8	18 0	2½ × 9	19 10
3 × 7	18 10	3 × 4½	18 0
2½ × 7	18 10	3 × 4	18 0

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅜	16/-	1½	26/-
½	17/-	1¾	32/6
1	20/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	21/-
1¼	26/-
1¼	32/6

MATCHING (BEST).

Inches.	per sq.
⅜	16/-
½	18/6
1	22/6

ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2 ..per 100 ft.	2 6	Per bundle	2 3

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt.	4 7 0 to 5 10 0

SLATES.

First quality slates from Bangor or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12 ..	29 15 0	18 by 10 ..	15 12 6
22 by 12 ..	25 0 0	18 by 9 ..	13 15 0
22 by 11 ..	22 10 0	16 by 10 ..	13 10 0
20 by 12 ..	22 0 0	16 by 8 ..	10 7 6
20 by 10 ..	19 7 6		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	£4 7 0
ditto hand-made ditto	5 0 0
Ornamental ditto	5 8 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£11 0 0
Plain Compound Girders	12 0 0
" " Stanchions	15 0 0
In Roof Work	18 0 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
⅜ in.	12 0 0	⅝ in. to ¾ in.	10 15 0
½ in.	11 0 0	⅞ in. to 2¼ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛ in. to 6 in.	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛ in. to 6 in.	Standard Fittings Sizes ⅛ in. to 6 in.	Standard Flanges Sizes ⅛ in. to 6 in.
	%	%	%	%
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv. gas	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Price ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/5½	1/1½	4½d.
3½ in.	1/6½	1/3	5½d.
4 in.	1/8½	1/4½	6½d.
4½ in.	1/8	1/6½	9½d.
5 in.	1/10½	1/8½	10d.

O.G. GUTTERS.

3 in.	1/7½	1/5½	7d.
3½ in.	1/9½	1/5½	7½d.
4 in.	1/11	1/6½	8½d.
4½ in.	2/0	1/9½	9½d.
5 in.	2/4½	2/0½	11½d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in.	2/2½	1/4½	2/0
2½ in.	2/3½	1/6½	2/4½
3 in.	2/9½	1/11	2/10½
3½ in.	3/3½	2/3½	3/3½
4 in.	3/9	2/9	4/0½

Less 20 per cent. trade discount.

Tonnage allowance—4 ton lots, 5 per cent.

2 ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts.	2 8	1 11	2 3
2½ in. "	3 0	2 1	2 10
3 in. "	3 4	2 3	3 5
3½ in. "	2 7½	2 10	3 11
4 in. "	4 0	3 2	4 6

L.C.C. COATED DRAIN PIPES—London Prices ex Stock.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9 ft. lengths	3 0	4 6	7 0
	cwt. qr. lbs.		
4 in. "	1 1 20	4 9	5 6 8 9
5 in. "	1 2 22	5 10	9 6 13 6
6 in. "	2 0 6	6 10	12 0 18 0

Gaskin for jointing 41/- per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common bars	10 0 0	to	10 10 0
Staffordshire Crown Bars—Good merchant quality	10 10 0	to	11 0 0
Staffordshire Marked Bars	14 0 0	..	15 0 0
Mild Steel Bars	9 0 0	..	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 10 0	..	9 0 0
Hoop iron, basis price	11 0 0	..	12 0 0
" Galvanised	27 10 0	..	28 10 0
Soft Steel Sheets, Black—Ordinary sizes, to 20 g.	11 0 0	..	11 10 0
" " " 24 g.	12 0 0	..	13 0 0
" " " 26 g.	14 0 0	..	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	14 0 0	..	15 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	15 0 0	..	16 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 10 0	..	18 10 0

No. 1 quality £4 per ton extra.

Flat and Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 9 ft. to 20 g.	13 10 0	..	15 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 10 0	..	18 0 0
Sheets, Galvanised Flat, Best quality—Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	14 10 0	..	16 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	15 0 0	..	17 0 0
Best Soft Steel Sheets, 26 g.	16 10 0	..	18 0 0
Cut Nails, 3 in. to 6 in.	15 10 0	..	17 0 0

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	0 9
Strong sheet "	0 10
Thin "	0 11
Copper nails "	1 0
Copper wire "	0 11

PLUMBERS' BRASS WORK.

Delivered in London

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in	1½ in.	2 in.	
29/-	45/-	76/-	153/-	246/-	510/-	per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
41/6	62/-	92/-	174/-	300/-	588/-	per doz.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—*(contd.)*.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in	¾ in.	1 in.
30/-	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	1¾ in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH GRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- ,,

TIN.—English Ingots, 2/5 per lb. SOLDER.—Plumber 1/-, Tinmen's, 1/2, Blowpipe, 1/3 per lb.

LEAD, &c.

(Delivered in London.)	£	s.	d.
LEAD—Sheet, English, 4 lb. and up.....	20	0	0
Pipe in coils.....	17	0	0
Soil pipe.....	24	10	0
Compo pipe	25	0	0

NOTE.—Country delivery, 20s. per ton extra; lots under 3 cwt. 4s. per cwt. extra, and over 3 cwt. and under 5 cwt., 2s. 6d. per cwt. extra. Cut to sizes 4s. cwt. extra.

Old lead, ex London area, at Mills.....per ton } £9 10 0

PAINTS, &c.

		£	s.	d.
Raw Linseed Oil, in pipes	per gallon	0	2	3
,, ,, ,, in barrels	,,	0	2	5
,, ,, ,, in drums.....	,,	0	2	8
Boiled ,, ,, in barrels	,,	0	2	11
,, ,, ,, in drums.....	,,	0	2	11
Turpentine, in barrels	,,	0	4	6
,, in drums (10 galls) ..	,,	0	4	8
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.) Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.		44	0	0

GENUINE WHITE LEAD PAINT.

	£	s.	d
"Father Thames." "Nine Elms." "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots per ton delivered	62	0	0
Red Lead, Dry (packages extra) .. per ton	31	0	0
Best Linseed Oil Putty ..... per cwt.	0	13	6
Size. XD quality ..... ffkn.	0	3	0

VARNISHES, &c.

		Per gallon		
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal.....	ditto	0	18	0
Pale Copal.....	ditto	1	0	0
Pale Opal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	0
Fine Copal Flatting.....	ditto	1	0	0
Hard Drying Oak	ditto	0	18	6
Fine Hard Drying Oak	ditto	0	19	6
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	12	6
Best ditto	ditto	1	2	6
Best Japan Gold Size.....		0	12	0
Best Black Japan		0	10	0
Oak and Mahogany Stain (water).....		0	12	6
Brunswick Black		0	7	0
Berlin Black		0	14	0
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebene		0	9	0
Cutrass Black Enamel.....		0	7	0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

Per ft.		Per ft.
15 oz. fourths ... 2½d.	32 oz. fourths	6½d.
15 ,, thirds..... 2½d.	32 ,, thirds	8½d.
21 ,, fourths ... 3½d.	Obscured Sheet, 15 oz. ...	3d.
21 ,, thirds..... 3½d.	,, ,, 21 oz. ...	4½d.
26 ,, fourths ... 4½d.	Fluted, 15 oz. 6½d., 21 oz.	9d.
26 ,, thirds..... 5½d.	Em'lld, 15 oz. 4½d., 21 oz.	5½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
Rolled plate ¼ in.....	4½d.
Rough rolled ¼ in.	5½d.
Rough rolled ½ in.	5½d.
Figured, Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted ditto	6½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	Per ft. s.	d.
Clearsheet—not exceeding 1 foot.....	1	0
Do. do. 2 feet	1	3
Do. over 2 feet	1	9
Polished plate—not exceeding 1 foot	1	6
Do. not exceeding 2 feet	3	0
Cathedral—not exceeding 1 foot	1	0
Do. larger sizes	1	6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1	0
1/16 in. Wired Georgian Design. Sizes up to 108 inches long by up to 24 inches wide.....	2	6

THE SCOTTISH BUILDER

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned. Items should be received at THE BUILDER *Office not later than Wednesday morning.*

ABERDEEN.—HOUSES.—Plans are in hand for 64 houses at Allendale-road. Mr. T. Scott Sutherland, architect, 10, Albyn-place.

ABERDEEN.—RECONSTRUCTION. — Corporation have scheme in hand for the reconstruction and widening of Bidford-road bridge, for which they have now received intimation of a Government grant of £4,176. Mr. T. F. Henderson, City Engineer.

BERVIE. — IMPROVEMENTS. — The Kincardines E.C. has decided to appeal to the C.C. to reconsider the decision to spend £3,000 in improving Bervie School and to adopt the E.C.'s recommended £6,000 scheme.

DINGWALL.—WATER SUPPLY.—The Town Council has decided to introduce an augmented water supply from Loch Ussie, on the Brahan estate, at a cost of £12,000.

DUNDEE.—BUILDINGS.—Plans and sections of the following new buildings, etc., have been lodged at the office of the City Engineer :—Ancrum-road, pavilion for the T.C.; Arbroath-road, shops and houses for W. M. Patrick; 80, Constable-street, alterations for J. Chapman (architects, Bruce, Son and Morton, 10, Whitehall-street); Glamis-road, bungalow for H. P. Cathcart (architect, W. A. Adam, 15, Park-place; Glamis-road, bungalow for A. T. Reoch (architect, W. A. Adam); Hill-street, houses for the T.C.; Kinghorne-road, houses for the T.C.; North Lindsay-street, alterations for Brown Brothers, Ltd. (architects, Thoms and Wilkie, 21, South Tay-street); Paterson-street and Harcourt-street, houses for the T.C.; Perth-road, garage for G. A. Reid (architects, MacLaren, Soutar and Salmond, 15, South Tay-street); Seymour-place, bungalow for W. Black (architect, W. M. Patrick, 26, Yeaman-shore); Stirling-street and Rosebank-street, clubrooms for the Dundee Conservative Association (architects, Gordon and Scrymgeour, 7, Ward-road).

DUNDEE.—SCHOOL.—The E.C. agreed to build a new school in Lochee to replace the existing St. Mary's R.C. girls' school. The cost is estimated at £26,665, exclusive of ground, furnishings, and professional services. Messrs. Allan & Friskin, of Dundee, are the architects.

EAST STIRLINGSHIRE.—WATER SUPPLY.—The East Stirlingshire and Falkirk Water Board has decided to promote a provisional order for the extension of their water supply at a cost of about £17,000.

EDINBURGH.—BUILDING. — Plans are in hand for £20,000 Sailors' Welfare building. Messrs. Tarbolton and Auchterlonie, architects, 7, St. Colum-street.—Plans are in hand for £30,000 extension to the Church of Scotland Deaconess Hospital, 142, Pleasance, Edinburgh.

EDINBURGH.—PARK.—An open-air theatre and ornamental park and lake have been suggested at a meeting of the General Purposes Committee of the T.C., as the features of the proposals for the development of the ground recently acquired by the Corporation in the valley of the Braid Burn.

ELPHINSTONE.—HOUSING.—East Lothian C.C. has authorised the County Clerk to negotiate for sites in connection with the Elphinstone clearance areas, with a view to the erection of from 30 to 34 new houses.

FALKIRK. — HOUSES. — The Corporation have plans in hand for 32 houses at Carsmuir. Mr. William Gibson, architect, Dollar Park House, Falkirk.

GLASGOW. — BUILDING. — Plans are in hand for new storage buildings for the Cowlairs Co-operative Society. Mr. J. T. Thomson, architect, 212, Bath-street, W.C.2.

GLASGOW.—LIBRARY.—The T.C. are to approach the Housing Committee with a view to the purchase of ground at Riddrie for a district library, and also to obtain an option over an area of ground at Cardonald, with a view to ultimate purchase. A special sub-committee is to report upon certain sites in Knightswood, over one of which it is deemed desirable that an option should be secured, for a district library at a future date.

GOREBRIDGE. — HOUSES. — Plans are in hand for 92 houses. Mr. William Scott, architect, 9, Drumsheugh-gardens, Edinburgh.

HAWICK. — HOUSES. — The Corporation have scheme of 52 houses in hand. Mr. T. Cuthbert, Burgh Architect.

KILWINNING.—HOSPITAL.—The Ayr C.C. approved of a scheme for the centralisation of hospital services in the county. The scheme involves the erection of a central hospital at Kilwinning at an estimated cost of £210,000. The Council also approved of a scheme for the erection of ante-natal clinics at Kilbirnie, Saltcoats, Galston, Prestwick, Cumnock, Girvan, Stewarton, and Maybole. The estimated cost is £5,000.

LOANHEAD.—ADDITIONS.—Plans are in hand for reconstruction and addition to public school. Mr. William Scott, architect, 9, Drumsheugh-gardens, Edinburgh.

MILLERSTON.—RECONSTRUCTION. — Plans are in hand for reconstruction of Church of Scotland and new halls. Mr. J. T. Thomson, architect, 212, Bath-street, Glasgow.

NEWTON-GRANGE.—HOUSES.—Plans are in hand for 150 houses. Mr. William Scott, architect, 9, Drumsheugh-gardens, Edinburgh.

SANQUHAR.—HOUSING.—The T.C. has decided to erect 22 three-apartment and 6 four-apartment houses, the extra ground to be acquired.

UDDINGSTON.—HALL.—Plans have been submitted for new church halls for Uddingston Parish Church at a cost of £4,000.

A similar scheme, also to cost £4,000, is being proceeded with by St. Andrew's Church of Scotland, Bellshill.

BUILDING TRADE WAGES IN SCOTLAND*

Following are grade rates authorised by the Scottish N.J.C. for Building Industry. Painters by ruling of the Scottish National Painters' and Decorators' Joint Council, have from January 1 new rates. Grade A towns, 1/6 per hour; Grade B, 1/4; Aberdeen has a special rate of 1/5½. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classifications ...	A	A¹	A²	A³	B	B¹	B²	B³
Craftsmen	1/6	1/5½	1/5	1/4½	1/4	1/3½	1/3	1/2½
Labourers	1/1½	1/1¼	1/0¾	1/0½	1/0	/11¾	/11¼	/11

Aberdeen	A	Dundee	A	Hawick	A³
Airdrie	A	Dunfermline	A	Helensburgh	A
Alexandria	A	Dunoon	A	Inverness	B
Arbroath	A²	East Lothian	A	Kilmarnock	A
Ayrshire	A	Edinburgh	A	Kincardineshire	A²
Bathgate	A	Falkirk	A	Kinross-shire	A
Bo'ness	A	Forfarshire	A²	Kirkcaldy	A
Broughty Ferry	A	Fort William	B	Lanarkshire	A
Clackmannanshire	A	Galashiels	A²	Leith	A
Coatbridge	A	Glasgow	A	Midlothian	A
Dumbartonshire	A	Greenock	A	Motherwell	A
Dumfries	A²	Hamilton	A	Peeblesshire	A²
Dumfriesshire	A²				

Perth	A	Renfrewshire	A
Perthshire	A²	Rothesay	A
Peterhead	A³	Roxburghshire	A³
St. Andrews	A	Selkirkshire	A²
Stirling	A	Stirlingshire, West	A
West Lothian	A	Wishaw	A

* The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 604.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	8	9
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	3
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundations 1 to 6	per yard cube	24	3
Add if in underpinning in short lengths	,, ,,	5	6
Add if in floors 6 in. thick	,, ,,	2	3
Add if in beams	,, ,,	2	9
Add if aggregate 1 : 2 : 4	,, ,,	9	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	27	0	0
Add if in stocks	,,	7	0	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	5	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	0	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	0	11
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	0

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	9
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	17	0
Chilmark stone fixed complete	,, ,,	16	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap. including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	4	0
Do. joists	,, ,,	4	6
Do. roofs, floors and partitions	,, ,,	5	0
Do. trusses	,, ,,	7	3

	¾″	1″	1¼″	2″
Deal rough close boarding per sq.	30/-	35/-	43/-	70/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	,,	50	0
Do. to beams	per ft. sup.	0	9
Centre for arches	,,	1	6
Gutter boards and bearers	,,	1	0

FLOORING.

	¾″	1″	1¼″	1½″
Deal-edges shot per sq.	—	38/-	45/-	52/-
Do. tongued and grooved ,,	—	43/-	50/-	58/-
Do. matchings ,,	40/-	45/-	—	—
Moulded skirtings, including backings and grounds per ft. sup.	1/4	1/7	1/9	2/3

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights, average size		3	6

DOORS.

	1½″	1¾″	2″
Two-panel square framed per ft. sup.	2/1	2/3	2/5
Four-panel Do. ,,	2/4	2/6	2/9
Two-panel moulded both sides ,,	2/6	2/9	2/11
Four-panel Do. Do. ,,	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	12	6

	1″	1¼″	1½″
Plain deal jamb linings framed per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers ,,	1/2	1/4	1/7
Add if cross-tongued ,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1½ in.	per ft. run	0	9
Mahogany handrail, average 3 in. x 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	0
Plain compound girders	,,	18	0
Do. stanchions	,,	20	9
In roofwork	,,	26	6

RAIN-WATER GOODS.

	3″	4″	5″	6″
Half-round plain rebated joints ft. run	1/-	1/1	1/3	1/6
Ogee Do. Do. ,,	1/2	1/3	1/9	2/3
Rain-water pipes with ears ,,	1/3	1/10	—	—
Extra for shoes and bends each	2/9	3/11	—	—
Do. stopped ends ,,	1/1	1/4	1/9	2/6
Do. nozzles for inlets ,,	2/2	2/7	3/7	4/-

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	38	0
Do. do. flats	,,	37	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

	½″	¾″	1″	1½″	2″	4″
Drawn lead waste per ft. run	11½	1/4	1/6½	2/5	2/8	—
Do. service... ,,	1/3	1/9	2/-	3/-	—	—
Do. soil ,,	—	—	—	—	—	5/9
Bends in lead pipe each	—	—	—	—	2/6	6/-
Soldered stop ends ,,	0/9	1/1	1/6	2/3	2/10	—
Red lead joints ,,	0/10	0/11	1/2	1/9	2/1	4/3
Wiped soldered joints ,,	2/3	2/9	3/0	3/10	4/10	6/9
Lead traps and cleaning screws ,,	—	—	—	10/6	14/-	—
Bib cocks and joints ,,	6/4	9/7	14/-	—	—	—
Stop cocks and joints ,,	12/4	14/2	20/8	54/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	0
Do. Do. Sirapite	,, ,,	2	3
Do. Do. Keen's	,, ,,	3	0
Add saw lathing	,, ,,	1	4
Add metal lathing	,, ,,	2	4
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	4	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	6½
26-oz. Do.	,, ,,	0	7¾
Obscured sheet	,, ,,	0	8
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10
¼-in. wired cast plate	,, ,,	1	1

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece 2/- to	4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Act, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*
¶ Denotes *accepted by H.M. Government Departments.*

Aberdeen.—Painting work at Woodend Hospital, for the T.C. Mr. T. F. Henderson, City Architect :—

*W. Smith, 4, St. Swithin's-street, Aberdeen £200 14 9

Amersham.—Four houses at Piggott's Orchard, for the R.D.C. Mr. A. Ambler, Housing Manager :—

Birch & Hunt, Hazelmere, Bucks ... £1,575
R. Brazil & Co., Amersham 1,299
T. J. L. Davies, Chalfont St. Peter ... 1,288
A. J. Saunders & Son, The Lee, Gt. Missenden 1,237
A. R. Howard, Chesham 1,185
*H. J. & A. Wright, Ltd., Gt. Missenden 1,155

Barking.—Various trades in connection with the erection of the Bifrous school, for the T.C. :—

Hot water heating installations—
*Colley Meikle & Co., Ltd. £2,560 0 0
Electrical installations—
*Harland & Woolf (subject to deductions in respect of certain items) 1,021 9 5
Gas installations—
*L. Andrews & Son 145 5 0
Wood flooring—
Acme Flooring & Paving Co.—

	per sq. yd. s. d.
Jarrow wood blocks	7 3½
Jarrow batten flooring	7 3
Two coats of liquid wax matt finish	4

Barking.—Eight houses at the pumping station, for the T.C. :—

‡W. Quilter & Son, Ltd., Blackheath, S.E. £3,890

Bellshill.—40 houses in Stewart-street. Mr. Peter Smith, Housing Architect, County Buildings, Hamilton :—

Excavation, brick and mason—*E. Morgan & Co., Hamilton.
Joinery, carpentry and ironmongery—*Wallace & Young, Uddingston.
Plumber—*T. Alston, Hamilton.
Slater—*J. Scott, Rutherglen.
Plaster—*Wilson & Hendry, Hamilton.
Painter—*A. G. Barrie, New Stevenson.
Electric light — *James Edward, 260, Great Western-road, Glasgow.

Birmingham.—Interior fittings at 12, Stephenson-street :—

*A. Edmonds & Co., Ltd., 91, Constitution-hill, Birmingham, 19.

Birmingham.—Interior fittings at 77, Colmore-row :—

*A. Edmonds & Co., Ltd., 91, Constitution-hill, Birmingham, 19.

Birmingham.—Interior fittings, etc., at 16, Vyse-street :—

*A. Edmonds & Co., Ltd., 91, Constitution-hill, Birmingham, 19.

Bridlington.—New school, for the T.C. :—

— Jaques, Bridlington £16,533

Chislehurst.—For Sidcup-place repairs, etc., for the U.D.C. Mr. T. J. Bee, A.R.I.B.A., architect, 11, Hatherley-crescent :—

Alterations and Repairs—
W. Pollock, Eltham £2,060 8 6
J. H. Carter, Chislehurst 2,012 0 0
Cole Loasby, 45, Museum Street, W.C. 1,966 10 0
Geo. Coe, Chislehurst 1,947 9 6
J. Nash & Sons, Wandsworth ... 1,912 12 9
T. Rider, Chislehurst 1,868 0 0
W. Martin, Eltham 1,803 15 0
T. Crossley & Sons, Bromley ... 1,749 10 0
‡Geo. Green (Beckenham), Ltd.... 1,698 0 0
W. H. Willson, Bromley 1,609 9 8

The above tenders include provisional sums for electric lighting and central heating, except in the case of Geo. Green (Beckenham), Ltd., which includes the tenders marked ** below.

Electric lighting—
W. H. Willson, Bromley £182 10 0
G. E. Wallis, Maidstone 177 13 0
Sidcup Electrical Co., Sidcup ... 142 8 4
Bell Bros., Ltd., Angel-court, E.C.2 140 0 0
H. T. Cox, Chislehurst 126 0 0
**Geo. Green (Beckenham), Ltd. ... 125 0 0
C. W. Gosling, Bromley 109 0 0

Heating—
James Combe & Sons, 9, Southampton-street, W.C. £281 0 0
Geo. Coe, Chislehurst 153 18 0
T. Crossley & Sons, Bromley 149 0 0
W. H. Willson, Bromley 127 0 0
H. White & Sons, Frith-street, Soho 119 7 0
**Geo. Green (Beckenham), Ltd. ... 117 10 0

Carnarvon.—Hotel and restaurant at Mount Snowden, for the Snowden Mountain Railway Co., Ltd., Llanberis. Mr. Clough Williams-Ellis, architect, Romney House, Holly Bush Hill, N.W.3 :—

*G. & J. P. Gregory, Carnarvon.

Carrick-on-Shannon. — Conversion of hospital building into county home, for the B.G. :—

*F. Fogarty, Templemore £24,380

Castlederg.—New hospital and workhouse buildings, for the B.G. :—

*J. J. Laughlin, Castlederg £1,455

Castleisland.—Technical school, for the E.C. :—

*E. O'Sullivan, Killorglin £2,700

Chelmsford.—Construction of the footbridges in Bell Meadow and at Rainsford-avenue, for the T.C. :—

	Bell Meadow Bridge.	Rainsford-avenue Bridge.
Northern Building & Contracting Co., Manchester	£823 18 1	£426 18 11
P. Gallagher, Ltd., Romford	813 2 5	421 10 3
G. P. Trentham, Ltd., London	812 19 5	429 3 9
A. J. Arnold, Chelmsford ...	770 9 1	344 9 8
*A. G. Wicks, Braintree	755 6 7	325 14 5

Cradley Heath. — Factory for Messrs. E. Stephens, Ltd., holloware manufacturers. Messrs. Cherrington & Stainton, architects, 153, Edmunds-street, Birmingham :—

Foundations—*T. Vale & Sons, Ltd., Stourport.

Dundalk.—Chapel for the mental hospital, for the County B.H. :—

J. Wynne & Co. £7,785
J. M'Guinness 7,363
T. MacDonald & Son 6,842
J. M'Adorey & Son 6,634
Thornbury Bros. 6,504
*P. Donnelly, Carrickmacross 6,282

Dunfanaghy.—Conversion of old fever hospital into school, for the E.C. (Vocational) :—

*H. Coyle, Cashelmore.

Durham.—Greenhouses at the horticultural colony, for theDurham C.C. Mr. W. J. Merrett, County Surveyor, 43, Old Elvet, Durham :—

*Boulton & Paul, Ltd., Riverside Works, Norwich.

Edinburgh.—Additions, etc., to St. Raphael's hospital. Mr. J. Douglas Miller, architect and surveyor, 5, Forres-street, Edinburgh :—

Excavation, brick and mason—*J. Dennis & Co., Ltd., Dalkeith.
Joinery, carpentry and ironmongery — *Scott, Morton and Tynecastle, Ltd.
Glazier—*G. Lindsay.
Plumber—*J. Stevens.
Plaster—*Robertson & Co., Ltd.
Concrete—*J. & J. Johnstone
Painter—*J. C. Rolland, Ltd.
Electrical—*Pratt Bros. Ltd.
Terrazzo and tile—*Toffolo Jackson & Co.
(Remainder of Edinburgh.)

Edmonton.—Reconstruction of bridge, in connection with Silver-street widening, for the Middlesex C.C. :—

*J. L. Eve Construction Co. £5,616 12 9

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

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Ennis.—Improvements to the nurses' quarters at fever hospital and county home, for Clare B.H. :—

*J. Daly, Ennis £446 15

Ewell.—Road making on Stoneleigh Park estate, Messrs. Atkinson & Marler, surveyors, 12, Broadway, Stoneleigh, Ewell. Mr. E. Russell, P.A.S.I., quantity surveyor :—

John Cronk & Sons, Ltd. £606
Bridgwater Bros. 545
George Wimpey & Co. 510
‡Willment Bros. 475

Fraserburgh.—Reconstruction and additions at 19 to 33, Mid-street. Mr. J. McWillie, architect and surveyor, 5, Mid-street :—

Steel structural—
*W. Rae & Sons, Inverurie £500
Joinery, carpentry and ironmongery—
*C. May & Co., Fraserburgh 700
Excavation, brick and mason—
*D. Smith, Fraserburgh 375

Glasgow.—New building at Parkhead for the British Bitumen Co. Messrs. Walker, Hardie & Smith, architects, 109, Douglas-street :—

Excavation, brick and mason—*R. Murdoch & Co., Ltd., Glasgow.
Steel construction—*Bladen & Co., Ltd., Glasgow.

Glasgow.—Warehouse and workshops in Holmes-street. Mr. A. T. King, architect, 121, Douglas-street, Blythswood :—

Excavation, brick and mason—*R. Gilchrist & Son, Ltd.
Joinery, carpentry and ironmongery—*J. Cochrane, Ltd.
Plumber—*R. Renfrew & Son, Ltd.
Plaster—*J. C. McIntyre.
Macasfelt—*D. Anderson & Son.
Glazing—*Western Glass Co.
(All of Glasgow.)

Greenock.—48 houses, etc., at the Auchindarroch site. Mr. David L. Henderson, Housing Architect, Wallace-square :—

Joinery, carpentry and ironmongery—*W. Gibson & Co., St. James-street, Paisley.

Greenock.—Pavilion at Lady Octavia-park, for the T.C. Mr. Robert Miller, architect, Hamilton-street :—

*W. Wilson & Son, 30, Market-street, Greenock £399 14

Greenock.—New lavatory at Town Hall, for the T.C. Mr. Robert Miller, Burgh Architect, Hamilton-street :—

*James Boyd, 31, Nicolson-street, Greenock £162 19 10

Gweedore.—New school at Knockfola, for the Vocational E.C. :—

*J. M'Lafferty, Carrigart.

Harrogate.—Interior painting of Plombiere Dept. at the Royal Baths, for the T.C. Mr. C. E. Rivers, A.M.Inst.C.E., Borough Engineer and Surveyor :—

*R. Rowntree, 28, West-park, Harrogate.

Hendon.—Making-up of Severn highway, for the R.D.C. :—

*G. Wimpey & Co., Ltd., Hammersmith, W.6 ..... £17,383 8 1

Hillingdon.—Widening and reconstruction of Long-lane, for the Middlesex C.C. :—

*G. Wimpey & Co., Ltd. £86,711 13

Hull.—New school in Eastfield-rd., for the E.C. :—

Borough Engineer £16,443

Kettering.—Extensions to ladies' factory in Field-street, for the Kettering Clothing Co-operative Society, Ltd. Messrs. R. J. Williams & Partners, architects and surveyors, Parkstile-chambers, Market-street :—

*C. Adams & Co., Wellingborough.

Kettering.—Extensions to the garage, for the Central Motor Co., Ltd. Messrs. R. J. Williams & Partners, architects and surveyors, Parkstile-chambers, Market-street :—

*W. Riddle & Son, Kettering.

Kettering.—Extensions to the technical staff offices, Corby, for Messrs. Stewarts & Lloyds, Ltd. Messrs. R. J. Williams & Partners, architects and surveyors, Parkstile-chambers, Market-street :—

*O. P. Drever & Son, Ltd., Kettering.

Kilkee.—32 houses, for the T.C. :—

*Purtill & Marrinan £8,960

Kingsbury.—Widening and reconstruction of Honeypot-lane, Kingsbury, between Kingsbury-road and Streatfield-road, for the Middlesex C.C. :—

Ernest Knifton, Ltd. £34,249 15 10
G. J. Anderson 32,142 12 7
Willment Bros., Ltd. 32,266 15 8
L. G. Speight & Co., Ltd. 31,357 9 6
J. B. Edwards & Co., Ltd. 31,354 11 6
Tarslag (1923), Ltd., Wolverhampton 30,315 12 6
J. Mowlem & Co., Ltd. 30,065 10 8
Howard Farrow 29,776 10 11
Roads & Public Works, Ltd. 29,653 6 1
G. P. Trentham & Co., Ltd., Hillingdon 29,398 5 10
W. & C. French & Co., Ltd., Buckhurst Hill 29,390 9 8
Fitzpatick & Co., Ltd. 29,131 17 1
Mears Bros., Ltd. 28,899 13 5
*G. Wimpey & Co., Ltd., Hammersmith W.6. ..... 28,369 0 6
(Remainder of London.)

Kingston-upon-Hull.—Patent roof glazing, to be used in erection of garage, for the T.C. Mr. H. Hamar, City Engineer:—
*W. H. Heywood & Co., Ltd., Huddersfield.

Leeds.—Slipper baths and washhouse, etc., in Meanwood-road, for the T.C. Mr. J. E. Acfield, City Engineer:—
*Mathews & Son, Railway-street, Leeds £8,040

Leeds.—Block of shops and houses at Burley Lodge-road. Mr. V. Ripley, architect:—
*W. Ripley & Sons, Ltd.

Leeds.—Alterations and additions to electrical factory in Gelderd-road, for Messrs. Prentice, Ltd. Messrs. Braithwaite & Jackman, architects, Legal-buildings:—
‡S. Flockton.

Leeds.—Internal reconstruction at old Grand Restaurant buildings, Boar-lane, for Messrs. Navana, Ltd. Mr. W. Dawson, architect:—
*S. MacFarlane, Ltd.

Liverpool.—Pipes, etc., for the T.C.:—
Steel pipes and other special pipes—
*South Durham Steel & Iron Co., Ltd., Middlesbrough £56,660 17 0
Laying of a line of 42-in. steel pipes and other ancillary works extending from Cuerdley to Prescot—
*A. Monk & Co., Ltd., Liverpool 29,068 9 9

Liverpool.—New bridge to carry Hillfoot-road continuation over the Cheshire Lines Railway, for the T.C. City Engineer:—
*T. Wrigley, Ltd., Corn Exchange-buildings, Manchester £6,970 6 6

Liverpool.—35 tenement dwellings at Chaucer-street, for the T.C. Director of Housing:—
*Tysons (Contractors), Ltd., Dryden-street, Liverpool £14,228

Liverpool.—Various works, for the T.C. Land Steward and Surveyor:—
Construction of cubicles in receiving home, Olive Mount Children's Hospital—
*C. & G. L. Desoer, Ltd., Liverpool £647
Improved accommodation for laundry workers, Belmont-road Institution—
*Bragg & Collins, Liverpool 1,280
Construction of central stores, etc., Belmont-road Institution—
*R. Myles, Ltd., Liverpool 2,850

Liverpool.—63 tenement dwellings at Fontenoy-street, for the T.C. Director of Housing:—
*J. Lewis, 13a, Laurel-road, Liverpool, 7 ..... £27,204

Liverpool.—External painting of houses, dwellings and shops, for the T.C. Director of Housing:—

*Alfred Allsop & Co., Bootle—	
384 houses, Norris Green	£713 15 6
1,341, Walton-Clubmoor	2,507 9 9
*Donald Eaton & Co., Bootle—	
257, Larkhill	481 9 6
*Alfred Allsop & Co., Bootle—	
120 flats, Muirhead-avenue	255 0 0
839 houses, Fazakerley	1,572 18 6
*W. Bell & Co., Liverpool—	
56, Knotty Ash	102 4 0
*Kay-Zed (Builders), Ltd., 47, Victoria-street, Westminster, S.W.1—	
260 dwellings and 6 shops, Melrose-road	479 0 0
90, Prince Edwin-street	184 10 0
681, Hornby-street	1,208 15 0
510, Bevington-street	931 10 0
429, Adlington-street	692 14 0
268, Northumberland-street	495 0 0

Llandovery.—Rebuilding of casual wards at the hospital, for the Carmarthen Public Assistance Committee:—
‡A. H. Band & Co., Jones-terrace, Swansea £3,165

London.—Rebuilding of the "Durham Arms" public-house, Hackney-road, E., for Messrs. Truman, Hanbury, Buxton & Co., Ltd. Mr. Arthur E. Sewell, L.R.I.B.A., architect, 91, Brick-lane, E.1. Quantities by Mr. William Gilbert, L.R.I.B.A., 74, Broad Street-avenue, E.C.2:—

Harris & Wardrop	£6,376
G. Parker & Sons	6,234
Halse & Sons	6,222
Arbro, Ltd.	6,187
Schooley & Son	6,137
Foster & Sons, Loughton	6,137
H. V. Clogg, Ltd.	6,118
Waterman & Co.	6,118
A. E. Symes, Ltd.	6,106
Loweth & Sons	6,077
*G. Barker, Whitechapel	5,983
(Surveyor's estimate £6,000.)	5,866
(Remainder of London.)	

London.—Erection of blocks Nos. 9 and 10, Limehouse-fields, E.14, for the Stepney B.C. Mr. Bernard J. Belsher, F.R.I.B.A., M.Inst.C.E., Borough Engineer and Surveyor:—

Eastern Construction Co.	£16,770
R. J. Rowley, Ltd.	14,023
J. Jarvis & Sons, Ltd.	13,931
Harry Neal, Ltd., Northwood	13,754
*Unit Construction Co., Ltd., 1, Robert-street, W.C.2	13,742
(Architect's estimate £15,381.)	
(Remainder of London.)	

¶**London.**—The following works contracts have been placed by the War Office during the week ended March 29:—
Didcot—alterations to workshops—G. Biggs & Sons, High Wycombe.
Aldershot—conversion of buildings—W. Laughton, Bedford.
London, East and West areas—artificers' work—A. E. Guest, Ltd., London, N.W.

¶**London.**—Tenders accepted by H.M.O.W. for the week ended March 29:—
Tables, writing—The Lord Roberts' Memorial Workshops, 122, Brompton-road, S.W.3.
Stove paste—Fortune & Co., Ltd., Marsh-lane, Preston.
Metal polish, liquid—Sunbeam Products, Ltd., Queen's-road, Battersea, S.W.8.
Rugby Post Office Radio Station (Hillmorton)—two heating boilers, one domestic hot water service boiler and a complete oil-firing plant—Combustions, Ltd., 37, Wallbrook, E.C.4.
Haslemere Post Office—alterations and additions—A. Bedford, 137, Green-lane, Palmers Green, N.13.
Cupboards, steel, vertical filing—Sankey-Sheldon (Harris & Sheldon, Ltd.), 46, Cannon-street, E.C.4.
Paper trays—F. Troy & Co., Ltd., 194, Finchley-road, N.W.3.
Cupboards, steel assessment—G. A. Harvey & Co. (London), Ltd., Woolwich-road, S.E.7.
Paper trays—Mann, Egerton & Co., Ltd., Prince of Wales-road, Norwich.
Cupboards, steel—Constructors, Ltd., Nickel Works, Tyburn-road, Erdington, Birmingham and Sankey-Sheldon (Harris & Sheldon, Ltd.), 46, Cannon-street, E.C.4.
Racks, double—Duncan Tucker (Tottenham), Ltd., Lawrence-road, S. Tottenham, N.15.
Forest Hill Telephone Exchange—erection—F. J. Moreton & Son, 171, Gipsy-road, S.E.27.
G.P.O. South, Carter-lane—strengthening of floors, etc.—James Westwood & Co., Ltd., Napier-yard, Millwall, E.14.
Banstead Post Office and Sorting Office—The Building and Public Works Construction Co., Ltd., Swindon.
Aylsham Post Office and Telephone Exchange—erection—H. C. Tofts & Sons, Hingham, Norwich.

London.—Complete electrical installation of Whidborne-buildings, Cromer-street and Whidborne-street, comprising 110 flats, the property of the East End Dwellings Co., Ltd., for the St. Pancras B.C.:—

Gibrico Electric, Ltd.	£524 0
White, Bays & White	520 0
Bucknells, Ltd.	470 0
Boyce Bros.	462 0
T. H. Smerdon	440 0
W. G. Bailey	436 0
H. J. Toms & Sons	427 6
Sparks & Morley	367 0
*Sims & Sims	342 5

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London.—Repairs and redecorations to dwellings, for the St. Pancras B.C.:—

*J. H. & W. Heal,	
Brookfield estate	£1,406 17 2
Barnes House and Morland House	568 0 0
Goldington Buildings	176 19 0
*Flesher Bros., Ltd.,	
Una House	273 13 2
*G. & A. Levett,	
Somers Town estate	207 5 8
Flaxman-terrace Dwellings and Prospect-terrace	501 18 6

London.—Shopfront and interior fittings at 305, Whitechapel-road, E.1:—
*A. Edmonds & Co., Ltd., 91, Constitution-hill, Birmingham, 19.

London.—Construction of steps from Western parapet of bridge to Bunns-lane, Mill Hill, of the Watford By-pass, for the Middlesex C.C. County Engineer and Surveyor:—

Howard Farrow, Ltd., Golders Green	£482 0 8
G. Wimpey & Co., Ltd., Hammersmith	220 2 4
G. Reeves, Wembley	197 1 1
*Bradfords, Ltd., Homerton	183 18 2

Mallow.—46 houses, for the U.D.C. Mr. D. J. Buckley, architect, Elmvale:—

P. J. Hegarty, Cork	£14,500
Black Bros., Athlone	13,012
Roche, Morrissey & Kennedy, Clonmel	12,967
*Timothy Walsh, Finbar House, Cork	12,540

Manchester.—Factory on a site in Longley-lane, Northenden, for Messrs. H. Sowden & Co., Ltd., 51, Grosvenor-street, Chorlton-on-Medlock. Messrs. Roberts & Wood, architects, 26, King-street:—
*Normanton's, Ltd., Longsight, Manchester.

Middlesex.—Maintenance work at the Sanatorium, Clare Hall, for the C.C.:—

H. E. Winskell	£809 14 4
J. Stewart & Sons, Ltd.	798 0 0
Newby Bros., Ltd.	745 0 0
S. Worboys	710 0 0
*C. Miskin & Sons, Ltd.	604 0 0

Middlesex.—Contract S. 24, for Sunbury and Feltham branch sewers, for the C.C.:—

Hussey, Egan & Pickmere, Ltd., Birmingham, 4	£90,167 18 3
Howard Farrow, Ltd., Bank-buildings	81,372 0 9
W. & C. French, Ltd., Buckhurst Hill	77,409 3 6
Cleveland Bridge and Engineering Co., Ltd., Isleworth	74,186 19 6
Mitchell Bros., Sons & Co., Ltd.	70,559 10 0
A. Waddington & Son	64,844 0 11
J. L. Eve Construction Co., Ltd.	59,566 10 3
Paterson & Dickinson, Ltd.	58,724 18 2
R. C. Crawford & Co., Ltd., Ormskirk	55,569 3 11
*Wm. Moss & Sons, Ltd., North Circular-road, Cricklewood, N.W.2	54,930 4 0
(Remainder of London.)	

Middlesex.—Replacing certain of the doors in the main corridors of "G" and "H" blocks at West Middlesex County Hospital with swing doors, for the C.C.:—

G. E. Snell, Twickenham	£172 0
W. S. Try, Uxbridge	165 10
W. Lacey, Hounslow	164 10
L. & W. Whitehead, Clapham	156 0
W. H. Gaze & Sons, Ltd., Kingston...	155 0
*F. D. Hidden & Co., Ltd., Brentford	147 0

Milliken Park.—New buildings, for Messrs. Robert Young & Co. Messrs. Walker, Hardie & Smith, architects, 109, Douglas-street:—
Excavation, brick and mason—*W. Isaac, Renfrew.
Steel construction—*Bladen & Co., Ltd., Glasgow.
Plumber—*Duncan Stephen, Glasgow.

Newcastle-on-Tyne.—Alterations and extensions to premises in St. Mary's-place, for Mr. A. Bedson. Messrs. Newcombe & Newcombe, architects, Eldon-square:—
*H. Waller, Back Waller-street, Newcastle.

Newcastle-on-Tyne.—Two garages, for Messrs. E. Baxter & Co., The Close, Newcastle. Messrs. Marshall & Tweedy, architects, Mervyn House, Pilgrim-street:—
*T. Clements & Son, Selbourne-gardens Newcastle.
Steelwork—*A. & J. Main, Newcastle.

Nottingham.—32 houses in Ilkeston-road and Fairfax-street, for the T.C. Mr. E. Phillips, Housing Architect. Exchange-buildings East:—
*J. Shaw & Co., Kimberley.

Oldham.—Classrooms and outside w.c.'s at Werneth school, for the T.C. Mr. John W. Hitching, A.I.A.A., architect. Quantities by the architect:—
Brickwork, etc—*J. & J. Blunn.
Carpenter and joiner—*Lord & Milner.
Mason—*Alex. Mackay.
Plumber, glazier and painter—*W. B. Stott & Co.
Slater—*Wm. Henshall & Sons.
Plasterer—*Edward Pearce.
(All of Oldham.)
(Cost about £1,250.)

Oldham.—Extensions to Werneth Council school, for the E.C. Capt. J. Ashurst, architect, Town Hall :—

Brickwork—*J. & J. Blunn.
Joiners—*Lord & Milner.
Plasterer—*Edward Pearce.
(All of Oldham.)

Oxford.—Five additional classrooms at the Temple Cowley Senior, for the E.C. :—

*E. W. Beard, Swindon £5,100

Preston.—Concrete lining of the Spade Mill to Aston Brickwork Culvert, for the T.C. :—

*Concrete Proofing Co., Ltd., London £13,156 12 8

Romford.—Rebuilding premises for Messrs. Greene Stores (Ilford), Ltd. Mr. E. Meredith, F.R.I.B.A., M.I.Struct.E., chartered architect, 7, Goodmayes-road, Goodmayes :—

Baker, Hammond & Laver, Rainham £1,886
J. Cannon & Sons, Stoke Newington ... 1,625
*J. Eaton & Sons, Chelmsford 1,756

St. Andrews.—Cloakroom, conveniences, shelter, etc., for the T.C. Messrs. Walker Pryde, architects and surveyors, Church-street :—

Building and mason—*F. D. Blaikie & Co.
Plumber—*D. Auchterlonie & Son.
Roof—*W. Briggs & Son, Ltd., Dundee.
Joinery, carpentry and ironmongery—*J. Gilmour.
Tile work and cement—*T. W. Hutton.
Electrical fittings and installation—*Electrical Supply Corporation, Ltd.
Cement glaze—*Dunbar & Co., Ltd.
(Remainder of St. Andrews.)

Sheffield.—Senior and junior school and caretaker's house in Hartley Brook-road, Low Shiregreen, for the E.C. Mr. W. G. Davies, F.R.I.B.A., architect :—

*W. G. Robson, Ltd., Sheffield £38,300

South Shields.—New pavilion, for Westoe Cricket Club. Mr. F. W. Newby, architect, 37, King-street :—

*J. Jennings, Alfred-street, South Shields.

Stafford.—Rewiring of (*a*) county buildings and police offices; (*b*) judge's house and shire hall, for the C.C. :—

(*a*) *W. Hampton, Stafford £1,117
(*b*) *W. J. France, Darlaston 344

Stanmore.—Widening Old Church-lane, Stanmore, between the pillar-box and Marsh-lane, for the Hendon R.D.C. :—

*G. Wimpey & Co., Ltd., Hammersmith, W.6 ..... £6,045 12 6

Twickenham.—Pavilions at Radnor-gardens and The Green, for the T.C. :—

*Greenaway & Son £960

Wallingford.—Construction of a riverside bathing place, for the T.C. Mr. C. J. Flooks, Borough Surveyor :—

†Henry Holbrow, Ltd., Cippenham, Slough £796 9 5

Wembley.—Two additional classrooms at Eastlane Council (senior) school, for the Middlesex E.C. :—

*A. & B. Hanson, Ltd., Southall.

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